



U.S. Department  
of Transportation  
**Federal Aviation  
Administration**



# SDR

## Summary

Service Difficulty Reporting

January 11, 1998 - January 17, 1998

GENERAL AVIATION, ZAC-327

*You can improve Air Safety by reporting the problem when you see it!*

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### SECTION

- I Significant Occurrence Report
- II Domestic Service Difficulty Report
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ISSUE: 98-03



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# **SDR SUMMARY**

General Aviation, ZAC-327



This summary includes domestic (United States) Service Difficulty Reports (SDRs) entered into the data base for aircraft weighing 12,500 lbs. and below. It also includes reports on aeronautical products (engines, propellers, and components), and all helicopters. A separate section for International SDRs for aircraft weighing 12,500 lbs. and under has also been included. Under a data exchange agreement, International SDRs are submitted to the FAA by the Civil Aviation Authority of other countries (currently, Canada - CAN, and Australia - AUS). All reports are sorted by aircraft make, model group (basic model), and Joint Aircraft System/Component (JASC) code. Within each aircraft model group, the specific model shown may vary, but similar types of reports will be grouped together and listed in ascending order by their JASC code. Each field contains all information submitted to the FAA. Some fields are not included in order to make the summary easier to read. Additional information may be obtained by referring to the "operator control number." Send your request to the Aviation Data Systems Branch, AFS-620 at the address or phone below.

The Regulatory Support Division (AFS-600) has established a "HomePage" on the Internet through which the same information is available. There is a large quantity of other information available through the AFS-600 HomePage such as the most current SDR system codes (i.e., Joint Aircraft System/Component Codes). The SDR Question and Answer Section of the Summary will also be transferred to the AFS-600 HomePage to simplify the process of preparing the SDR Summaries in the PDF format each week. There are "hot buttons" to take you to other locations and sites where FAA Flight Standards Service Information is available. The AFS-600 "HomePage" address is:

**<http://www.mmac.jccbi.gov/afs/afs600>**

**"The Service Difficulty Reports in this publication are derived from unverified information submitted by the aviation community without FAA verification for accuracy. The number of SDRs submitted is not an indication of the mechanical reliability or fitness of an airline or individual operator, and the information should not be used as such."**

Comments are welcomed and may be directed to:

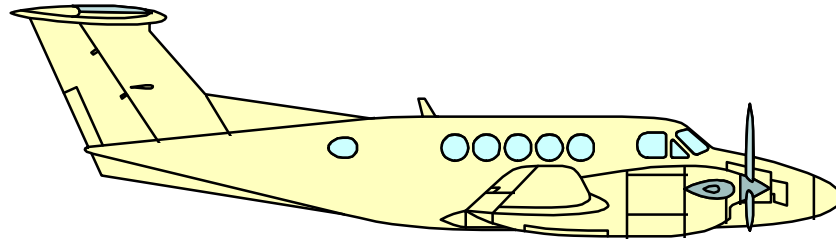
*Federal Aviation Administration  
Aviation Data Systems Branch, AFS-620  
P.O. Box 25082  
Oklahoma City, OK 73125-5029  
Phone: (405) 954-4171, Fax: (405) 954-4748*

Your continued participation is essential and is an integral part of ensuring aviation safety. Thank you for supporting the Service Difficulty Program! If you have any questions regarding this special notice you can contact John Jackson at (405) 954-6486, or Jim Gillespie at (405) 954-1141, or Blake McDonald at (405) 954-0307 in the Aviation Systems Branch (AFS-620). Their E-mail addresses are:

**[john\\_e\\_jackson@mmacmail.jccbi.gov](mailto:john_e_jackson@mmacmail.jccbi.gov)**

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# **SIGNIFICANT OCCURRENCE REPORT**





U.S. Department  
of Transportation  
**Federal Aviation  
Administration**

## **THE SIGNIFICANT OCCURRENCE REPORT**



The Significant Occurrence Report is a compilation all of the star bordered reports that appear in the General Aviation Service Difficulty Report (SDR) Summary, ZAC-327. The Significant Occurrence Report is used to highlight industry problem areas to field inspectors and the aviation public.

Limited analysis is performed by the Aviation Data Systems Branch, AFS-620 during the preparation of the "Significant Occurrence Report", which is generated each week and is included in the front of the Air Carrier SDR Summary. Significant Reports are hand selected by AFS-620's inspectors based on the individual merit of each report. The criteria for selection includes, but is not limited to, items that indicate high failure rates; items related to accidents or incidents; or design or maintenance failures which may affect the safe operation of the aircraft.

In some cases, this limited analysis of SDR data leads to the preparation of information bulletins which are routed to the appropriate product certification office for further investigation of the problem. The end result may be the issuance of an airworthiness directive (AD) by the Aircraft Certification Service (AIR) if warranted.

The Significant Occurrence Report (section I) of the weekly SDR Summary is not intended to be a summary of all significant events and should not be used as such. We recommend that you review further the applicable sections of the SDR summary that may be of interest.

# GENERAL AVIATION SIGNIFICANT OCCURRENCE REPORT

1/11/98 - 1/17/98    ISSUE: 98-03    ZAC-327

ATA OPER	REG. NO SERIAL NO	ACFT MAKE ACFT MODEL	ENG MAKE ENG MDL	PROP MAKE PROP MDL	COMP MFG COMP MDL	PART NAME PART NUMBER	PART COND PART LOC.	TT TSO	DIFF. DATE OPER CONT NO
7120	2009X	BEECH				MOUNT	MISMANUFACTURED		12/19/97
	ME66	76				10591001077	ENGINE		98ZZZX173
*****	UPON ARRIVAL OF A NEW ENGINE MOUNT, DISCOVERED TWO OF THE WELD JOINTS WERE DEFECTIVE. THE GUSSET PLATES ON BOTH UPPER BRACE ARMS WERE NOT WELDED DOWN, ONLY TACK-WELDED TO THE BRACE ARMS. THE MANUFACTURER SAID THAT ALTHOUGH IT WAS NOT CORRECT, SEVERAL UNITS HAD BEEN SHIPPED WITH THIS CONDITION. SUBMITTER RECOMMENDED THAT ANY DUTCHESS OWNERS THAT HAVE REPLACED THEIR ENGINE MOUNTS WITH KOSOLA UNITS (LEFT AND RIGHT ARE IDENTICAL), HAVE THE UPPER GUSSET PLATES INSPECTED FOR GAPS UNDER THE PLATES.								
2215	365ES	CESSNA				CABLE	MISROUTED	489	12/19/97
LJEA	17280023	172R					AUTOPILOT		98ZZZX163
*****	DURING ROUTINE INSPECTION, FOUND AUTOPILOT SERVO CONTROL CABLE WRAPPED AROUND RT AILERON CONTROL CABLE. MM DOES NOT SHOW THESE CABLES CROSSED. INSPECTED CABLES FOR DAMAGE AND POSITIONED PROPERLY. AIRCRAFT WAS DELIVERED FROM THE MANUFACTURER WITH THIS CONDITION.								
2710	361ES	CESSNA				CABLE	NOT SAFETIED	471	12/17/97
	17280011	172R				0510105360	LEFT AILERON		98ZZZX168
*****	DURING 100-HOUR INSPECTION, FOUND LEFT AILERON DIRECT CABLE TURNBUCKLE NOT SAFETIED. THE TURNBUCKLE IS NOT VISIBLE WITH THE HEADLINER INSTALLED. IT WOULD HAVE BEEN UNABLE TO DETECT HAD THE HEADLINER NOT BEEN REMOVED TO REPLACE DAMAGED AILERON CABLE. RECOMMEND RE-DESIGN OF HEADLINER TO GAIN ACCESS TO CABLES DURING ROUTINE INSPECTIONS.								
2710	361ES	CESSNA				CABLE	FRAYED	471	12/12/97
	17280011	172R				0510105360	RT AILERON		98ZZZX167
*****	WHILE PERFORMING A 100-HOUR INSPECTION, FOUND THE RIGHT HAND AILERON CABLE FRAYED/TANGLED AS IF SOMETHING MIGHT HAVE GOT BETWEEN IT AND THE PULLEY IN THE SAME AREA AS THE PULLEY. ALSO, FOUND A ROUND FILE APPROXIMATELY .1875 INCH DIAMETER. IT IS UNCLEAR IF THE FILE GOT BETWEEN THE CABLE AND PULLEY. THE AREA IN CONCERN IS THE PULLEY AT THE FLOOR AND JUST BEHIND THE DOOR ON THE PILOT'S SIDE.								
2730	4477L	CESSNA				BRACKET	CRACKED	5451	12/27/97
	17254572	172G				05130631	ELEV BELLCRANK		98ZZZX170
*****	INSPECTION OF 4 LOOSE RIVETS ON BELLY SKIN BETWEEN WING STRUT LOWER ATTACH POINTS REVEALED THE 'ELEVATOR BELLCRANK BRACKET', PN 051306301, HAD BEEN FLEXING. ON CLOSER EXAMINATION, MANY CRACKS WERE FOUND IN THE BEND RADII OF THE FORWARD AND AFT FLANGES WITH COMPLETE SEPARATION OF THE LEFT FORWARD FLANGE.								

(End of GENERAL AVIATION SIGNIFICANT OCCURRENCE REPORT)

**FEDERAL AVIATION ADMINISTRATION**  
**SIGNIFICANT OCCURRENCE REPORT INDEX**

Showing Specific Part Numbers and Aircraft Model by Year

FOR THE PERIOD OF: 1/11/98 To 1/17/98

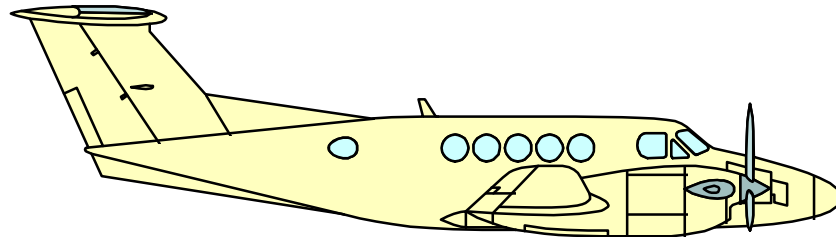
<u>PART NUMBER</u>		<u>TOTAL</u>	<u>YEAR</u>											
<u>PART NAME</u>	<u>ACFT MODEL</u>		<u>1987</u>	<u>1988</u>	<u>1989</u>	<u>1990</u>	<u>1991</u>	<u>1992</u>	<u>1993</u>	<u>1994</u>	<u>1995</u>	<u>1996</u>	<u>1997</u>	<u>1998</u>
<b>0510105360</b>														
CABLE	172R	1	-	-	-	-	-	-	-	-	-	-	-	1
	R172K	1	-	-	-	-	1	-	-	-	-	-	-	-
<b>TOTAL of # 0510105360</b>	<b>-----</b>	<b>2</b>	-	-	-	-	1	-	-	-	-	-	-	1
<b>05130631</b>														
BELLCRANK	172H	1	-	-	-	-	-	-	1	-	-	-	-	-
BRACKET	172	1	-	-	-	-	1	-	-	-	-	-	-	-
	172F	2	-	-	-	-	1	-	-	-	-	1	-	-
	172G	4	-	-	-	-	-	1	-	1	-	1	-	1
	172H	3	-	-	-	1	-	-	1	-	1	-	-	-
<b>TOTAL of # 05130631</b>	<b>-----</b>	<b>11</b>	-	-	-	1	2	1	2	1	1	2	-	1
<b>10591001077</b>														
MOUNT	76	1	-	-	-	-	-	-	-	-	-	-	-	1
<b>TOTAL of # 10591001077</b>	<b>-----</b>	<b>1</b>	-	-	-	-	-	-	-	-	-	-	-	1
<b>216362036</b>														
FUEL MANIFOLD	unknown	1	-	-	-	-	-	-	-	-	-	-	-	1
<b>TOTAL of # 216362036</b>	<b>-----</b>	<b>1</b>	-	-	-	-	-	-	-	-	-	-	-	1
<b>2621126906</b>														
WINDSHIELD	SA26AT	1	-	-	-	1	-	-	-	-	-	-	-	-
<b>TOTAL of # 2621126906</b>	<b>-----</b>	<b>1</b>	-	-	-	1	-	-	-	-	-	-	-	-
<b>BYLB504231</b>														
VALVE	FALCON200	1	-	-	-	-	-	-	-	-	-	-	-	1
<b>TOTAL of # BYLB504231</b>	<b>-----</b>	<b>1</b>	-	-	-	-	-	-	-	-	-	-	-	1

FAA SIGNIFICANT OCCURRENCE REPORT INDEX 1/11/98 To 1/17/98 (cont'd)

<u>PART NUMBER</u>		<u>YEAR</u>												
<u>PART NAME</u>	<u>ACFT MODEL</u>	<u>TOTAL</u>	<u>1987</u>	<u>1988</u>	<u>1989</u>	<u>1990</u>	<u>1991</u>	<u>1992</u>	<u>1993</u>	<u>1994</u>	<u>1995</u>	<u>1996</u>	<u>1997</u>	<u>1998</u>
TOTAL for ALL (11) PART NUMBERS: - - - -		17	-	-	-	2	3	1	2	1	1	2	-	5
END OF SIGNIFICANT OCCURRENCE REPORT INDEX														



# **DOMESTIC SERVICE DIFFICULTY REPORT**





**DOMESTIC SERVICE DIFFICULTY REPORT SUMMARY - AIRCRAFT****1/11/98 - 1/17/98    ISSUE: 98-03    ZAC-327**

ATA OPER	REG. NO SERIAL NO	ACFT MAKE ACFT MODEL	ENG MAKE ENG MDL	PROP MAKE PROP MDL	COMP MFG COMP MDL	PART NAME PART NUMBER	PART COND PART LOC.	TT TSO	DIFF. DATE OPER CONT NO
2460 RMXA	75LV BB1075	BEECH B200				BREAKER 70000150	FAILED NR 1 BUSS	12/1/97 98ZZZX182	
DUPLICATED A REPORTED FAILURE AND ISOLATED CIRCUIT BREAKERS ON NR 1 BUSS TO SHOW THAT THEY WERE FAULTY. INSTALLED 2 EACH NEW 50 AMP BREAKERS. FUNCTION CHECKED SATISFACTORY ON GROUND AND THEN PERFORMED MAINTENANCE FLIGHT CHECK. SUBMITTER STATED THE BREAKERS SEEMED TO BE ORIGINAL EQUIPMENT.									
3250 KKYA	83KA BB436	BEECH 200BEECH			50820042601	SPRING RETAINER 50820038	BROKEN NLG STEERING	6002 98ZZZX161	10/22/97
WHLE ATTEMPTING TO TAXI FROM THE RAMP EN ROUTE FROM OXC TO HPN, PILOT FOUND IT TOOK FULL LEFT RUDDER TO TAXI STRAIGHT. THE AIRCRAFT WAS SHUT DOWN WITHOUT INCIDENT. SUBSEQUENT INVESTIGATION REVEALED THE SPRING STRUT BARREL ASSEMBLY SPRING RETAINER HAD FAILED. BOTH THE RETAINER AND THE BARREL END WERE BROKEN. AS A RESULT OF THE BARREL FAILURE, A TUBE, PN 50-820189, WAS ALSO BENT AND CAUSED THE STEERING TO GO OUT OF RIG.									
2720	2753A D9052	BEECH V35A				CONTROL TUBE 35524106	SEIZED RUDDERVATOR	12/16/97 98ZZZX187	
PER AD 06-11-97, FOUND LEFT RUDDERVATOR TUBE WAS HOLDING TRAPPED WATER AND INBOARD BEARING WAS COMPLETELY SEIZED WITH RUST.									
7120  *****	2009X ME66	BEECH 76				MOUNT 10591001077	MISMANUFACTURED ENGINE	12/19/97 98ZZZX173	
UPON ARRIVAL OF A NEW ENGINE MOUNT, DISCOVERED TWO OF THE WELD JOINTS WERE DEFECTIVE. THE GUSSET PLATES ON BOTH UPPER BRACE ARMS WERE NOT WELDED DOWN, ONLY TACK-WELDED TO THE BRACE ARMS. THE MANUFACTURER SAID THAT ALTHOUGH IT WAS NOT CORRECT, SEVERAL UNITS HAD BEEN SHIPPED WITH THIS CONDITION. SUBMITTER RECOMMENDED THAT ANY DUTCHESS OWNERS THAT HAVE REPLACED THEIR ENGINE MOUNTS WITH KOSOLA UNITS (LEFT AND RIGHT ARE IDENTICAL), HAVE THE UPPER GUSSET PLATES INSPECTED FOR GAPS UNDER THE PLATES.									
3230	321DM LW250	BEECH C90				RETRACT CHAIN 508202012	FAILED NLG AFT	3849 98ZZZX183	12/17/97
NLG AFT RETRACT CHAIN MASTER LINK FAILED. ALL PIECES OF MASTER LINK FOUND AND IN SERVICEABLE CONDITION. RECOMMEND INSTALLATION OF NEW STYLE PRESS FIT LINK, PN 131378-25-2-CL, TO PREVENT RECURRENCE.									
2520	3964V 18283	CESSNA 170				SEAT ATTACH	WRONG PART AFT SEAT	3133 98ZZZX171	8/24/97
DURING ACCIDENT INVESTIGATION, FOUND RIVNUTS WERE SUBSTITUTED FOR 3 NAS684A3 NUTPLATES FOR REAR SEAT ATTACH HARDWARE. THE RIVNUTS EXTRUDED THROUGH THE HOLES IN THE STRUCTURE AND ALLOWED THE REAR SEAT TO PARTIALLY BREAK LOOSE. PARTS MANUAL FIG 20, ITEM NR 12.									
2710  *****	361ES 17280011	CESSNA 172R				CABLE 0510105360	FRAYED RT AILERON	471 98ZZZX167	12/12/97
WHILE PERFORMING A 100-HOUR INSPECTION, FOUND THE RIGHT HAND AILERON CABLE FRAYED/TANGLED AS IF SOMETHING MIGHT HAVE GOT BETWEEN IT AND THE PULLEY IN THE SAME AREA AS THE PULLEY. ALSO, FOUND A ROUND FILE APPROXIMATELY .1875 INCH DIAMETER. IT IS UNCLEAR IF THE FILE GOT BETWEEN THE CABLE AND PULLEY. THE AREA IN CONCERN IS THE PULLEY AT THE FLOOR AND JUST BEHIND THE DOOR ON THE PILOT'S SIDE.									
2710  *****	361ES 17280011	CESSNA 172R				CABLE 0510105360	NOT SAFETIED LEFT AILERON	471 98ZZZX168	12/17/97
DURING 100-HOUR INSPECTION, FOUND LEFT AILERON DIRECT CABLE TURNBUCKLE NOT SAFETIED. THE TURNBUCKLE IS NOT VISIBLE WITH THE HEADLINER INSTALLED. IT WOULD HAVE BEEN UNABLE TO DETECT HAD THE HEADLINER NOT BEEN REMOVED TO REPLACE DAMAGED AILERON CABLE. RECOMMEND RE-DESIGN OF HEADLINER TO GAIN ACCESS TO CABLES DURING ROUTINE INSPECTIONS.									
2730  *****	4477L 17254572	CESSNA 172G				BRACKET 05130631	CRACKED ELEV BELLCRANK	5451 98ZZZX170	12/27/97
INSPECTION OF 4 LOOSE RIVETS ON BELLY SKIN BETWEEN WING STRUT LOWER ATTACH POINTS REVEALED THE 'ELEVATOR BELLCRANK BRACKET', PN 051306301, HAD BEEN FLEXING. ON CLOSER EXAMINATION, MANY CRACKS WERE FOUND IN THE BEND RADII OF THE FORWARD AND AFT FLANGES WITH COMPLETE SEPARATION OF THE LEFT FORWARD FLANGE.									

\*\*\*\*\* DENOTES SIGNIFICANT OCCURRENCE

## DOMESTIC SERVICE DIFFICULTY REPORT SUMMARY - AIRCRAFT (cont'd)

1/11/98 To 1/17/98 ISSUE: 98-03 ZAC-327

ATA OPER	REG. NO SERIAL NO	ACFT MAKE ACFT MODEL	ENG MAKE ENG MDL	PROP MAKE PROP MDL	COMP MFG COMP MDL	PART NAME PART NUMBER	PART COND PART LOC.	TT TSO	DIFF. DATE OPER CONT NO
2750	361ES 17280011	CESSNA 172R				CABLE 0510105193	NOT SAFETIED FLAP	471	12/17/97 98ZZZX166
DURING 100 HOUR INSPECTION, AILERON CABLE WAS BEING REPLACED. FOUND FLAP DIRECT CABLE NOT SAFETIED. THIS CABLE IS LOCATED BEHIND HEADLINER. IT WOULD HAVE NEVER BEEN DETECTED IF HEADLINER WAS INSTALLED. SUBMITTER RECOMMENDED ACCESS PLATE TO INSPECT CABLES DURING ROUTINE INSPECTION.									
2842 LJEA	365ES 17280023	CESSNA 172R				TRANSMITTER S33311	FAILED RT WING FUEL	11	12/30/97 98ZZZX164
RIGHT FUEL QUANTITY GAUGE INOPERABLE. TRACED PROBLEM TO TRANSMITTER IN RT WING. PLASTIC FLOAT HAD SEPARATED FROM THE ARM AND WAS ALLOWING THE ARM TO SINK. FLOAT FAILED BECAUSE OF INADEQUATE CRIMP ON ARM WHICH ALLOWED THE RETAINING WASHER AND FLOAT TO COME OFF. THIS TRANSMITTER WAS INSTALLED ONLY 11.0 HOURS AGO. ANOTHER NEW TRANSMITTER WAS INSTALLED AND SYSTEM APPEARS TO OPERATE NORMALLY.									
2842 LJEA	365ES 17280023	CESSNA 172R				TRANSMITTER S33311	FAILED LT/RT FUEL QTY	475	12/19/97 98ZZZX165
PILOT COMPLAINED OF FLUCTUATING FUEL QUANTITY INDICATING GAUGE. TRACED PROBLEM TO BOTH LEFT AND RIGHT QUANTITY TRANSMITTERS GIVING ERRONEOUS OHM READINGS. REPLACED TRANSMITTERS AND SYSTEM OPERATES NORMALLY.									
3260 FVAA	6440V 172RG0701	CESSNA 172RG				SWITCH S20881	CORRODED RT MLG DOWNLOCK		12/6/97 98ZZZX192
UPON APPROACH TO LNG, GEAR LOWERED, GREEN DOWN AND LOCKED LIGHT DID NOT COME ON. CYCLED GEAR, STILL NO GREEN LIGHT. GEAR VISUALLY APPEARED DOWN AND LOCKED (IN POSITION). LANDED WITH NO PROBLEMS. FOUND RT MLG DOWN AND LOCKED SWITCH CORRODED AND INTERMITTENT. REPLACED SWITCH WITH NEW, P/N S2088-1, SWITCH. NOTE: SWITCH IS IN OPEN GEAR WELL AND IN EXHAUST PATH.									
2701	3546F 18257546	CESSNA 182J				YOKE SHAFT 07136671	FOULED LT CONTROL WHEEL		12/1/97 98ZZZX189
DURING ANNUAL INSPECTION, FOUND UP ELEVATOR TRAVEL BELOW LIMIT BY 30 PERCENT - 18 DEGREES UP - 26 DEGREES PLUS 1 MINUS ZERO DEG. INSPECTION FOUND 'TINNERMAN' TYPE HOSE CLAMP CAUGHT INBETWEEN LT YOKE SHAFT P/N 0713667-1, AND LT CONTROL WHEEL SUPPORT ASSY STOPPING THE LAST 2.0 INCHES OF TRAVEL. COULD NOT DETERMINE SOURCE OF CLAMP. VARIOUS AVIONICS AND 'BEHIND PANEL' WORK PERFORMED IN THE LAST 2 YEARS.									
2731 KI2R	206PD 676	CESSNA TU206G				TRIM TAB 12346281	CORRODED ELEVATOR	3748	12/18/97 98ZZZX186
IN THE PROCESS OF ANNUAL INSPECTION, TECHNICIAN NOTICED WHAT APPEARED TO BE CORROSION STARTING UNDER THE PAINT AROUND THE RIVET HEADS ON THE UPPER SURFACE OF THE BRACKET FOR THE ELEV TAB CONTROL ROD. WHEN PICKED AT THE RIVET HEADS WITH FINGERNAIL, SIX OF THE EIGHT RIVET HEADS POPPED OFF.									
5312	69943 4140645	CESSNA 414				BULKHEAD 501302014	CRACKED NOSE WELL	3709	1/2/98 98ZZZX199
NOSE WHEEL WELL SUBSTRUCTURE INSPECTION FOUND BULKHEAD, PN 501302014, HAD CRACKED BUTT END.									
5312	69943 4140645	CESSNA 414				RIVETS	SHEARED NOSE WELL	3709	1/2/98 98ZZZX200
NOSE WHEELWELL SUBSTRUCTURE INSPECTION FOUND BULKHEAD RIVETS SHEARED WHERE T-ANGLES, P/N 5213028-6, AND P/N 5013022-5, ARE RIVETED TO GUSSETS, P/N 521328-4, AND P/N 5013022-801.									
5320	69943 4140645	CESSNA 414				STIFFENER 501304411	LOOSE NOSE WELL	3709	1/2/98 98ZZZX202
NOSE WHEELWELL SUBSTRUCTURE INSPECTION FOUND STIFFENERS, P/N 5013044-3, P/N 5013044-11, WITH LOOSE AND WORKING RIVETS.									
5320	69943 4140645	CESSNA 414				STIFFENER 50130443	LOOSE NOSE WELL	3709	1/2/98 98ZZZX201
NOSE WHEELWELL SUBSTRUCTURE INSPECTION FOUND STIFFENERS, P/N 5013044-3, P/N 5013044-11, WITH LOOSE AND WORKING RIVETS.									

\*\*\*\*\* DENOTES SIGNIFICANT OCCURRENCE

## DOMESTIC SERVICE DIFFICULTY REPORT SUMMARY - AIRCRAFT (cont'd)

1/11/98 To 1/17/98 ISSUE: 98-03 ZAC-327

ATA OPER	REG. NO SERIAL NO	ACFT MAKE ACFT MODEL	ENG MAKE ENG MDL	PROP MAKE PROP MDL	COMP MFG COMP MDL	PART NAME PART NUMBER	PART COND PART LOC.	TT TSO	DIFF. DATE OPER CONT NO
5320	69943 4140645	CESSNA 414				DOUBLER 52130453	CRACKED NOSE WELL	3709	1/2/98 98ZZZX203
NOSE WHEELWELL SUBSTRUCTURE INSPECTION FOUND DOUBLERS, P/N 5213045-3 LT, AND P/N 5213045-2 RT, CRACKED AT UPPER AFT CORNER RADIUS RELIEF CUT-OUTS.									
5320	69943 4140645	CESSNA 414				DOUBLER 52130452	CRACKED NOSE WELL	3709	1/2/98 98ZZZX204
NOSE WHEELWELL SUBSTRUCTURE INSPECTION FOUND DOUBLERS, P/N 5213045-3 LT, AND P/N 5213045-2 RT, CRACKED AT UPPER AFT CORNER RADIUS RELIEF CUT-OUTS.									
5712	69943 4140645	CESSNA 414				RIB 082217574	CRACKED MLG WELL	3709	1/2/98 98ZZZX206
MLG SUPPORT STRUCTURE LT AND RT MLG WELL, INSPECTION FOUND CRACKS IN RIBS, P/N 0822175-79, AND P/N 0822175-74, CENTER RIB WEB AT THE UPPER AFT CORNER OF CUT-OUT HOLE WHERE OPERATING PUSH/PULL ROD PASSES THROUGH, TOWARD TOP OF RIB.									
5712	69943 4140645	CESSNA 414				RIB 082217579	CRACKED MLG WELL	3709	1/2/98 98ZZZX205
MLG SUPPORT STRUCTURE LT AND RT MLG WELL, INSPECTION FOUND CRACKS IN RIBS, P/N 0822175-79, AND P/N 0822175-74, CENTER RIB WEB AT THE UPPER AFT CORNER OF CUT-OUT HOLE WHERE OPERATING PUSH/PULL ROD PASSES THROUGH, TOWARD TOP OF RIB.									
5730	69943 4140645	CESSNA 414				SKIN 08220009	CRACKED MLG WELL	3709	1/2/98 98ZZZX207
MLG SUPPORT STRUCTURE LT AND RT MLG WELL, INSPECTION FOUND WING SKINS, P/N 08220009, UPPER INBOARD CRACKED ABOVE RIB INSIDE THE NACELLE BAG LOCKER.									
5743	69943 4140645	CESSNA 414				CASTING 08221807	LOOSE MLG WELL	3709	1/2/98 98ZZZX208
MLG SUPPORT STRUCTURE LT AND RT MLG WELL, INSPECTION FOUND MLG SIDEBRACE SUPPORT CASTINGS, P/N 822180-7, AND P/N 0822180-8, BOLTED TO RIBS, WERE LOOSE AND ONE DASH 8 CRACKED.									
5743	69943 4140645	CESSNA 414				CASTING 08221808	CRACKED MLG WELL	3709	1/2/98 98ZZZX209
MLG SUPPORT STRUCTURE LT AND RT MLG WELL, INSPECTION FOUND MLG SIDEBRACE SUPPORT CASTINGS, P/N 822180-7, AND P/N 0822180-8, BOLTED TO RIBS, WERE LOOSE AND ONE DASH 8 CRACKED.									
3244 PNSA	441LL 441139	CESSNA 441				TIRE 40169	FLAT LT/RT MLG		12/23/97 PNSA971213
DURING ROLL OUT, NO BRAKE ACTION FROM RT MAIN, TIRE HAD LOST PRESSURE, WHILE REMOVING AIRCRAFT FROM RUNWAY LT MAIN ALSO WENT FLAT. REPLACED BOTH WHEEL ASSY. NOTE AMBIENT TEMP -37 F.									
7922 RF1R	737 40004OTC	PARTEN P68TCOBS				VALVE 53E22144	FAILED THERMO BYPASS	209	12/16/97 98ZZZX194
AIRCRAFT HAD HIGH OIL TEMPERATURE AND LOW OIL PRESSURE. REMOVED BYPASS VALVE ASSY AND TESTED. VALVE ONLY MOVED .025 INCH. REPLACED WITH NEW VALVE. OPS CHECKED GOOD.									
3222	91246 188209012	PIPER PA18150			SCOTT	CORK 3200	CRACKED TAILWHEEL	691	1/2/98 98ZZZX195
TAIL WHEEL FORK WAS CRACKED AT CENTER TOP AREA OF THE FORK ASSY. THE CRACK STARTED AT THE HOLE FOR A PIN TO HOLD THE LOWER THRUST WASHER AND WENT DOWN AROUND THE FORK ASSY. THIS MAY BE A METAL AGING PROBLEM. THE CRACK IS ABOUT 2 INCHES LONG AND STRAIGHT DOWN AROUND THE PART.									
3710 PNSA	82455 328006079	PIPER PA32301				VACUUM PUMP 211CC	FAILED E/E COMPT	876	12/1/97 PNSA971216
VACUUM PUMP FAILED EN ROUTE, DIVERTED FLIGHT TO MAINTENANCE BASE, REPLACED PUMP.									

\*\*\*\*\* DENOTES SIGNIFICANT OCCURRENCE

DOMESTIC SERVICE DIFFICULTY REPORT SUMMARY - AIRCRAFT (cont'd)

1/11/98 To 1/17/98    ISSUE: 98-03    ZAC-327

ATA OPER	REG. NO SERIAL NO	ACFT MAKE ACFT MODEL	ENG MAKE ENG MDL	PROP MAKE PROP MDL	COMP MFG COMP MDL	PART NAME PART NUMBER	PART COND PART LOC.	TT TSO	DIFF. DATE OPER CONT NO
7160	146BU	PIPER				CLAMP	FAILED		12/22/97
CW7R	468408057	PA46310P					INDUCTION TUBE		98ZZZX185
DURING FLIGHT AT ALTITUDE, AIRCRAFT LOST MANIFOLD PRESSURE RESULTING IN LOSS OF CABIN PRESSURE. ON GROUND, FOUND LEFT FORWARD INDUCTION TUBE CLAMP OFF. AIRCRAFT WAS A RAM CONVERSION. RE-INSTALLED CLAMP. GROUND CHK OK. SUSPECT LOOSE CLAMP.									

(End of DOMESTIC SERVICE DIFFICULTY REPORT SUMMARY - AIRCRAFT)

DOMESTIC SERVICE DIFFICULTY REPORT SUMMARY - HELICOPTERS

1/11/98 - 1/17/98 ISSUE: 98-03 ZAC-327

ATA OPER	REG. NO SERIAL NO	ACFT MAKE ACFT MODEL	ENG MAKE ENG MDL	PROP MAKE PROP MDL	COMP MFG COMP MDL	PART NAME PART NUMBER	PART COND PART LOC.	TT TSO	DIFF. DATE OPER CONT NO
6322	7730	BELL				SLEEVE	CRACKED		7/28/97
	K821	47G2				476205381C	FAN DRIVE		98ZZZX179
INSPECTION FOUND FAN DRIVE SLEEVE WITH LARGE THRU-CRACKING IN FLANGE AREA.									
2810	117NC	BOLKMS				VAPOR SEAL	MALFUNCTION	449	12/1/97
RMXA	7509	BK117C1				11764641	RT FWD VENT SYS		98ZZZX178
INSPECTED FUEL SYSTEM AND ENGINES AND FOUND FUEL SEEPING FROM THE RT FORWARD FUEL VENT. APPLIED AIR BACK PRESSURE TO THE RT FORWARD VENT VALVE. TOPPED FUEL OFF AND FLEW AIRCRAFT. NO FUEL WAS LEAKING FROM THE RIGHT FORWARD VENT. SUSPECT VENT VALVE WAS STUCK OPEN.									
6700		HUGHES				BELLCRANK	BINDING		12/16/97
		500N				369A7301501	FLIGHT CONTROL		98ZZZX177
FOUND ON ACCEPTANCE INSPECTION THAT BELLCRANK HAS BOTH PIVOT BEARINGS PRE-LOADED TO A POINT OF NO ROTATION.									
6700		HUGHES				BELLCRANK	BINDING		12/16/97
		500N				369A7301501	FLIGHT CONTROL		98ZZZX176
FOUND ON ACCEPTANCE INSPECTION THAT BELLCRANK HAS BOTH PIVOT BEARINGS PRE-LOADED TO A POINT BEARING WILL NOT ROTATE FOR INSTALLATION.									
(End of DOMESTIC SERVICE DIFFICULTY REPORT SUMMARY - HELICOPTERS)									

**DOMESTIC SERVICE DIFFICULTY REPORT SUMMARY - ENGINES****1/11/98 - 1/17/98 ISSUE: 98-03 ZAC-327**

ATA OPER	REG. NO SERIAL NO	ACFT MAKE ACFT MODEL	ENG MAKE ENG MDL	PROP MAKE PROP MDL	COMP MFG COMP MDL	PART NAME PART NUMBER	PART COND PART LOC.	TT TSO	DIFF. DATE OPER CONT NO
7310	3964V	CESSNA	CONT			TEE FITTING	BROKEN	20	8/24/97
	18283	170	C145*				CARBURETOR INLET		98ZZZX172
INVESTIGATION OBSERVED COMMON HARDWARE FITTINGS HAD BEEN INSTALLED IN LIEU OF AN8266D AS DISPLAYED IN CESSNA PARTS MANUAL FIG 34-32.									
7420	29MM	CESSNA	CONT			HARNES	SHORTED		12/26/97
HBCA	402B0863	402B	TSIO520E			CH11730	NR 5 CYL LEAD	79	98ZZZX188
DURING THE COURSE OF NORMAL OPERATION, PILOT NOTICED LEFT ENGINE RUNNING ROUGH. AFTER LANDING, MAINTENANCE DETERMINED THE LEFT MAGNETO HARNES, NR 5 CYLINDER, BOTTOM LEAD, HAD SHORTED INTERNALLY CAUSING THE SPARK PLUG TO NOT FUNCTION PROPERLY.									
7414	4957J	PIPER	LYC		BENDIX	HOUSING	CRACKED	3885	12/3/97
RG4R	28R30704	PA28R180	IO360B1E		S49L1227	103493943	ENGINE MAGNETO		98ZZZX191
INSP FOUND BOTH MAGNETO HOUSINGS ARE CRACKED IN SEVERAL PLACES. SUSPECT THAT WHEN NEW COILS WERE INSTALLED, THE WEDGES WERE INSTALLED INCORRECTLY OR OVERDRIVEN INTO POSITION.									
7414	4957J	PIPER	LYC		BENDIX	HOUSING	CRACKED	3885	12/3/97
RG4R	28R30704	PA28R180	IO360B1E		S49L1209	103493943	ENGINE MAGNETO		98ZZZX190
INSPECTION FOUND BOTH MAGNETO HOUSINGS ARE CRACKED IN SEVERAL PLACES. SUSPECT THAT WHEN NEW COILS WERE INSTALLED, THE WEDGES WERE INSTALLED INCORRECTLY OR OVERDRIVEN INTO POSITION.									
8550	8004N	PIPER	LYC			OIL LINE	LOOSE		12/14/97
PNSA	328206014	PA32301	IO540K1G5				NR 5 CYLINDER		PNSA971215
AFTER ENGINE SHUTDOWN, PILOT NOTICED OIL DRIPPING FROM COWLING. MAINTENANCE SECURED OIL RETURN LINE FROM NR 5 CYL, LEAK CHECK OK.									
8520		SCWZER	PWA			ROLLER	SPALLED		12/16/97
		G164B	R1340*			5999	VALVE TAPPET	175	98ZZZX184
AT THE TIME OF ROUTINE MAINTENANCE, METAL WAS DISCOVERED IN THE OIL SCREEN AND FILTER AND ALSO THE CHIP DETECTOR LIGHT CAME ON. UPON INSPECTION, FOUND THE VALVE TAPPET ROLLERS SPALLING.									

(End of DOMESTIC SERVICE DIFFICULTY REPORT SUMMARY - ENGINES)

ATA OPER	REG. NO SERIAL NO	ACFT MAKE ACFT MODEL	ENG MAKE ENG MDL	PROP MAKE PROP MDL	COMP MFG COMP MDL	PART NAME PART NUMBER	PART COND PART LOC.	TT TSO	DIFF. DATE OPER CONT NO
2215	365ES	CESSNA				CABLE	MISROUTED	489	12/19/97
LJEA	17280023	172R					AUTOPILOT		98ZZZX163
*****	DURING ROUTINE INSPECTION, FOUND AUTOPILOT SERVO CONTROL CABLE WRAPPED AROUND RT AILERON CONTROL CABLE. MM DOES NOT SHOW THESE CABLES CROSSED. INSPECTED CABLES FOR DAMAGE AND POSITIONED PROPERLY. AIRCRAFT WAS DELIVERED FROM THE MANUFACTURER WITH THIS CONDITION.								
6113	734	PIPER				SPINNER	CRACKED		12/31/97
RF1R	185258	PA18150				U14426000	PROPELLER		98ZZZX193
DURING 100-HOUR INSPECTION, REMOVED SPINNER AND FOUND CRACKS IN FORWARD SPINNER BULKHEAD PLATE EXTENSION FROM BEND RADIUS ON LEFT AND RIGHT SIDE APPROXIMATELY 1.5 INCHES.									
(End of DOMESTIC SERVICE DIFFICULTY REPORT SUMMARY - COMPONENTS)									

**DOMESTIC SERVICE DIFFICULTY REPORT SUMMARY - PROPELLERS****1/11/98 - 1/17/98    ISSUE: 98-03    ZAC-327**

<b>ATA OPER</b>	<b>REG. NO SERIAL NO</b>	<b>ACFT MAKE ACFT MODEL</b>	<b>ENG MAKE ENG MDL</b>	<b>PROP MAKE PROP MDL</b>	<b>COMP MFG COMP MDL</b>	<b>PART NAME PART NUMBER</b>	<b>PART COND PART LOC.</b>	<b>TT TSO</b>	<b>DIFF. DATE OPER CONT NO</b>
6110		BEECH 100BEECH		HARTZL HCB3TN3		PITCH CHANGE ROD 5862	BENT PROPELLER ASSY	2/1/96 2053	EY2R9601414
		PITCH CHANGE ROD IS BENT.							
6114		BEECH A100		HARTZL HCB4TN3		HUB 840139	DEFECTIVE PROPELLER ASSY	1/1/96 548	EY2R9601382
		PROP HUB ASSY FAILED S.B. 196A							
6110		BEECH 200BEECH		HARTZL HCD4N3A		SPLIT BEARING 2202	DEFECTIVE PROP ASSY	248 7/1/96	EY2R9601359
		SPLIT BEARING ONE RACE WOULD NOT DEMAGNETIZE. SUSPECT LIGHTNING.							
6110		BEECH 200BEECH		HARTZL HCD4N3A		HUB 4991	DAMAGED PROPELLER ASSY	2/1/96 EY2R9601422	
		HUB O'RING GROOVE DAMAGE							
6114		BEECH 200BEECH		HARTZL HCD4N3A		HUB 4991	DAMAGED PROPELLER ASSY	2/1/96 EY2R9601423	
		THREADS PULLED ON HUB							
6114		BEECH V35		MCAULY 3A32C76		HUB C4211C76	MIS DRILLED PROPELLER ASSY	2165 1016	1/1/96 EY2R9601367
		PROP ASSY HUB DRILLED PAST .152							
6111		BEECH B90		HARTZL HCB3TN3		CLAMP 83867	PITTED PROP ASSY	2/1/96 EY2R9601413	
		BLADE CLAMP HAS PITS IN RADIUS							
6110		BEECH 95B55		MCAULY 2AF34C55		FERRULE C4451	DAMAGED PROPELLER ASSY	1/1/96 EY2R9601366	
		SNAP RING GROOVE DAMAGED							
6110		CESSNA 172		HARTZL HCC2YR1		PISTON ROD 24182	BENT PROPELLER ASSY	1/1/96 EY2R9601387	
		PROP ASSY PISTON ROD BENT							
6110		CESSNA 172		MCAULY 1C160DTM		FIX PITCH PROPELLER	DEFECTIVE PROPELLER ASSY	2/1/96 EY2R9601403	
		3 HOLES IN HUB FROM STOP DRILL							
6111		CESSNA 182E		MCAULY D2A34C58		BLADE S82N4	DAMAGED PROPELLER ASSY	3/1/96 EY2R9601455	
		BLADE SN C89035YS, THREAD DAMAGE							
6114		CESSNA 182		MCAULY 2A34C66		HUB C5480C66	DEFECTIVE PROPELLER ASSY	3/1/96 EY2R9601426	
		HUB HAS IMPROPER CYL. MTG. HOLE							

\*\*\*\*\* DENOTES SIGNIFICANT OCCURRENCE



## DOMESTIC SERVICE DIFFICULTY REPORT SUMMARY - PROPELLERS (cont'd)

1/11/98 To 1/17/98 ISSUE: 98-03 ZAC-327

ATA OPER	REG. NO SERIAL NO	ACFT MAKE ACFT MODEL	ENG MAKE ENG MDL	PROP MAKE PROP MDL	COMP MFG COMP MDL	PART NAME PART NUMBER	PART COND PART LOC.	TT TSO	DIFF. DATE OPER CONT NO
6110		CESSNA T210M		MCAULY D3A34C402		PROPELLER A4002	CORRODED PROPELLER ASSY		11/1/96 EY2R9601213
		PROPELLER ASSY IS CORRODED							
6110		CESSNA T303		MCAULY 3AF32C507		PISTON ROD ASSY D3474	WORN PROPELLER ASSY		3/1/96 EY2R9601427
		PROP PISTON ROD ASSY WORN							
6110		CESSNA 310Q		MCAULY 3AF32C87		PISTON ROD ASSY D3474	WORN PROPELLER ASSY		3/1/96 EY2R9601434
		PROP PISTON ROD ASSY WORN							
6110		CESSNA 310R		MCAULY 3AF32C87		PISTON ROD ASSY C3474	WORN PROPELLER ASSY		3/1/96 EY2R9601430
		PROP PISTON ROD ASSY WORN							
6110		CESSNA 310R		MCAULY 3AF32C87		ACTUATING PIN B4459	BENT PROPELLER ASSY		1/1/96 EY2R9601374
		BLADE ACTUATING PIN BENT							
6111		CESSNA 310		MCAULY 3AF32C87		BLADE S82NC55	DAMAGED PROPELLER ASSY		2/1/96 EY2R9601407
		BLADE DAMAGED DUE TO DRILL MARK IN BALANCE HOLE							
6114		CESSNA 310		MCAULY 3AF32C87		HUB D7015C87	DEFECTIVE PROPELLER ASSY		2/1/96 EY2R9601408
		HUB STAKING PLUG HOLE IN WRONG PLACE							
6114		CESSNA 310		MCAULY 3AF32C87		HUB D7015C87	DEFECTIVE PROPELLER ASSY		3/1/96 EY2R9601431
		HUB STAKING PIN HOLES TOO CLOSE							
6114		CESSNA 310Q		MCAULY 3AF32C87		HUB D7015C87	DEFECTIVE PROPELLER ASSY		1/1/96 EY2R9601373
		PROP HUB ASSY HAS IMPROPER SAFETY HOLE							
6114		CESSNA 310R		MCAULY 3AF32C87		HUB D7027C87	DEFECTIVE PROPELLER ASSY		1/1/96 EY2R9601370
		PROP ASSY HUB EXPANSION HOLES TOO CLOSE							
6110		CESSNA 320C		MCAULY 3AF32C72		HUB D7015C72	DEFECTIVE PROPELLER ASSY		1/1/96 EY2R9601368
		HUB WELCH PLUG HOLES TOO CLOSE							
6110		CESSNA 340A		MCAULY 3AF32C93		PISTON ROD ASSY D3474	WORN PROPELLER ASSY		3/1/96 EY2R9601440
		PROP PISTON ROD ASSY WORN							

\*\*\*\*\* DENOTES SIGNIFICANT OCCURRENCE

## DOMESTIC SERVICE DIFFICULTY REPORT SUMMARY - PROPELLERS (cont'd)

1/11/98 To 1/17/98 ISSUE: 98-03 ZAC-327

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6110		CESSNA 340A		MCAULY 3AF32C93		FERRULE C4451	MIS DRILLED PROPELLER ASSY		3/1/96 EY2R9601438
		PROP FERRULE HOLES DRILLED TOO CLOSE							
6110		CESSNA 340A		MCAULY 3AF32C93		PISTON ROD ASSY D3474	WORN PROPELLER ASSY	3406 1101	3/1/96 EY2R9601437
		PROP PISTON ROD ASSY WORN							
6110		CESSNA 401A		MCAULY 3AF32C*		RETAIN BEARING C5270	FRETTED PROPELLER ASSY	489	2/1/96 EY2R9601405
		PROP ASSY RETAIN BEARING RACES FRETTED							
6110		CESSNA 401A		MCAULY 3AF32C*		BALL BEARING A16349	FRETTED PROPELLER ASSY	489	2/1/96 EY2R9601404
		PROP ASSY BALLS FRETTED							
6114		CESSNA 402B		MCAULY 3AF32C87		HUB D7015C87	DEFECTIVE PROPELLER ASSY		2/1/96 EY2R9601406
		PROP ASSY HUB WELCH PLUGS DRILLED WRONG							
6114		CESSNA 402B		MCAULY 3AF32C87		HUB D7015C87	DEFECTIVE PROPELLER ASSY		1/1/96 EY2R9601369
		PROP ASSY HUB EXPANSION HOLE TOO DEEP							
6114		CESSNA 404CESSNA		MCAULY 3FF32C501		HUB D5878C501	DAMAGED PROPELLER ASSY		3/1/96 EY2R9601452
		HUB BEARING RACE MATING AREA DAMAGED							
6110		CESSNA 414		MCAULY 3AF32C93		ADAPTER C3267	DAMAGED PROPELLER ASSY		1/1/96 EY2R9601376
		DAMAGE ON INSIDE BUSHING							
6111		CESSNA 414		MCAULY 3AF32C93		BLADE S82NC55	DAMAGED PROPELLER ASSY		2/1/96 EY2R9601411
		BLADE HAS SCRATCH IN RADIUS OF THREAD							
6111		CESSNA 414		MCAULY 3AF32C93		ACTUATING PIN B4459	DAMAGED PROPELLER ASSY		2/1/96 EY2R9601409
		BLADE ACTUATING PIN DAMAGE NO REPAIR							
6114		CESSNA 414		MCAULY 3AF32C93		HUB D7015C93	DEFECTIVE PROPELLER ASSY		1/1/96 EY2R9601375
		PROP HUB ASSY DRILLED PAST .152							
6110		CESSNA 421A		MCAULY 3AF34C92		PISTON ROD ASSY D3474	WORN PROPELLER ASSY		3/1/96 EY2R9601443
		PROP PISTON ROD ASSY WORN							

\*\*\*\*\* DENOTES SIGNIFICANT OCCURRENCE

## DOMESTIC SERVICE DIFFICULTY REPORT SUMMARY - PROPELLERS (cont'd)

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ATA OPER	REG. NO SERIAL NO	ACFT MAKE ACFT MODEL	ENG MAKE ENG MDL	PROP MAKE PROP MDL	COMP MFG COMP MDL	PART NAME PART NUMBER	PART COND PART LOC.	TT TSO	DIFF. DATE OPER CONT NO
6110		CESSNA 421A		MCAULY 3AF34C92		PISTON ROD ASSY D3474	WORN PROPELLER		3/1/96 EY2R9601441
		PROP PISTON ROD ASSY WORN							
6110		CESSNA 421C		MCAULY 3FF32C501		PISTON ROD ASSY C3474	WORN PROPELLER ASSY	3139 1430	3/1/96 EY2R9601453
		PROP PISTON ROD ASSY WORN							
6111		CESSNA 421B		MCAULY 3AF34C92		BLADE S90LF0	DAMAGED PROPELLER ASSY		3/1/96 EY2R9601445
		BLADE SN B20325YS, THREADS SCRATCHED							
6114		CESSNA 421		MCAULY 3AF34C92		HUB D7019C92	DEFECTIVE PROPELLER ASSY		3/1/96 EY2R9601444
		PROP HUB ALIGNMENT STUD PULLED							
6110		CESSNA 425		MCAULY 4HFR34C762		ACTUATI PIN C5387	DAMAGED PROPELLER ASSY		2/1/96 EY2R9601412
		ACTUATING PIN DAMAGED							
6110		MTSBSI MU2*		HARTZL HCB3TN5		CLAMP 83867	MIS DRILLED PROPELLER ASSY		2/1/96 EY2R9601417
		CLAMP SCREW HOLES MISDRILLED							
6110		MTSBSI MU2*		HARTZL HCB3TN5		CLAMP 13019S	MIS DRILLED PROPELLER ASSY		2/1/96 EY2R9601416
		CLAMP SCREW HOLES MISDRILLED							
6110		PIPER PA28R201T		HARTZL BHCC2YF1		SPLIT BEARING 2202	DEFECTIVE PROPELLER ASSY	2809 283	8/1/96 EY2R9601361
		PROPELLER MAGNETIZED. SUSPECT LIGHTNING							
6110		PIPER PA31350		HARTZL HCE3YR2A		LOW PTCH STOP 24041	STRIPPED PROPELLER ASSY		1/1/96 EY2R9601398
		PROP LOW PITCH STOP HAS STRIPPED THREADS							
6111		PIPER PA31		HARTZL HCE2YK2		BLADE FC84754	WORN PROPELLER ASSY	4975 1810	1/1/96 EY2R9601392
		BLADE SN F05201, PIN WORN							
6111		PIPER PA31		HARTZL HCE2YK2		BLADE FC84754	WORN PROPELLER ASSY	4975 1810	1/1/96 EY2R9601391
		BLADE SN F05216, PIN WORN							
6111		PIPER PA31310		HARTZL HCE3YR2A		BLADE FJC84686R	DEFECTIVE PROPELLER ASSY	1956	1/1/96 EY2R9601396
		BLADE SN E34407, BORE OVERSIZED							

\*\*\*\*\* DENOTES SIGNIFICANT OCCURRENCE

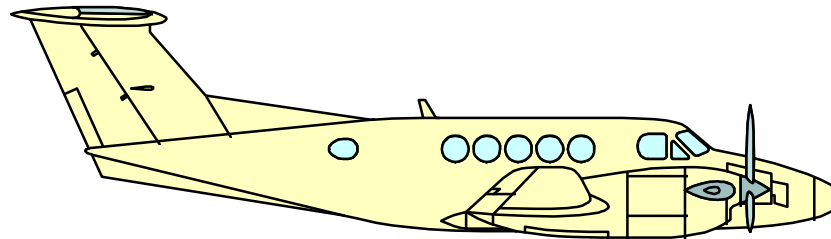
DOMESTIC SERVICE DIFFICULTY REPORT SUMMARY - PROPELLERS (cont'd)

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ATA OPER	REG. NO SERIAL NO	ACFT MAKE ACFT MODEL	ENG MAKE ENG MDL	PROP MAKE PROP MDL	COMP MFG COMP MDL	PART NAME PART NUMBER	PART COND PART LOC.	TT TSO	DIFF. DATE OPER CONT NO
6111		PIPER PA31310		HARTZL HCE3YR2A		BLADE FJC84686R	DEFECTIVE PROPELLER ASSY	1956	1/1/96 EY2R9601397
	BLADE SN E35512, BORE OVERSIZED								
6110		PIPER PA31T		HARTZL HCB3TN3		LOW STOP COLLAR 30012	DEFECTIVE PROPELLER ASSY		2/1/96 EY2R9601415
	LOW STOP COLLAR IS OUT OF ROUND								
6111		PIPER PA32301T		HARTZL HCE3YR1		BLADE F7673DR	DEFECTIVE PROPELLER ASSY		1/1/96 EY2R9601393
	BLADE BEARING BORE OVERSIZE								
(End of DOMESTIC SERVICE DIFFICULTY REPORT SUMMARY - PROPELLERS)									



# **INTERNATIONAL SERVICE DIFFICULTY REPORT**



**INTERNATIONAL SERVICE DIFFICULTY REPORT SUMMARY - AIRCRAFT****1/11/98 - 1/17/98 ISSUE: 98-03 ZAC-327**

ATA OPER	REG. NO SERIAL NO	ACFT MAKE ACFT MODEL	ENG MAKE ENG MDL	PROP MAKE PROP MDL	COMP MFG COMP MDL	PART NAME PART NUMBER	PART COND PART LOC.	TT TSO	DIFF. DATE OPER CONT NO
6100		AMTRMX XP503	AMTR 582			PROPELLER	FOD PROP BLADE LE		5/21/97 AU970952
(AUS) PILOTS VISOR FLEW OFF AND STRUCK PROPELLER CAUSING A SMALL SECTION OF THE LEADING EDGE TO SEPARATE - THIS DEFECT WAS RECEIVED FROM THE AUF AND IS FOR INFORMATION ONLY									
5711		AYRES S2RT34NORMAL	PWA PT6A34AG	HARTZL HCB3TN3	202077902	SPAR CAP 227791	CRACKED LT & RT WING		4/18/97 AU970840
(AUS) LH AND RH WING LOWER SPAR CAPS PNO 202077901 AND PNO 202077902 CRACKED IN SPLICE BLOCK HOLES									
5711		AYRES S2RT65	PWA PT6A65AG	HARTZL HCB5MP3	AYRES 20207T902	SPAR CAP 20207T902	CRACKED RT WING		6/27/97 AU970738
(AUS) RH WING LOWER SPAR CAP CRACKED FROM BOLT HOLE - CRACK LENGTH 3.048MM (0.120IN) - FOUND DURING MAGNETIC PARTICLE INSPECTION									
5720		BBAVIA 8KCAB	LYC AEIO320E2B	SNSNCH 74DM		FITTING 21976	CRACKED WING STRUT		6/12/97 AU970761
(AUS) WING STRUT ATTACHMENT FITTING CRACKED - FOUND DURING MAGNETIC PARTICLE INSPECTION IAW AD/CHA22/2 - CRACK ORIGINATED FROM AIRCRAFT TIEDOWN ATTACHMENT									
5740		BEECH 100BEECH	PWA PT6A28			WASHER 6147514435	FAILED WING FITTING		10/5/94 CA941018101
(CAN) WHILE DOING AD CF-81-25R5, NEW TORQUE WASHER INSTALLED AT RE-ASSEMBLY OF LOWER FORWARD WING FITTING. INDICATING RING OF WASHER TIGHTENED FAR BELOW NORMAL TORQUE.									
7120		BEECH 100BEECH	PWA PT6A28		BEECH	MOUNT 50910279	CHAFED ENGINE		10/4/94 CA941012006
(CAN) WHILE SWAPPING ENGINES BETWEEN TWO KING AIR 100'S ALL FOUR ENGINE MOUNTS WERE FOUND CHAFED BEYOND ALLOWABLE LIMITS. CAUSE OF CHAFING WAS CONTACT WITH LOWER REAR FIRESEAL.									
7120		BEECH 100BEECH	PWA PT6A28	HARTZL	BEECH	MOUNT 50910279	CHAFED ENGINE		10/4/94 CA941012007
(CAN) WHILE SWAPPING ENGINES BETWEEN TWO KING AIR 100'S ALL FOUR ENGINE MOUNTS WERE FOUND CHAFED BEYOND ALLOWABLE LIMITS. CAUSE OF CHAFING WAS CONTACT WITH LOWER REAR FIRESEAL.									
2720		BEECH B200C	PWA PT6A42			RUDDER SYSTEM	MALFUNCTION RUDDER BOOST		6/12/97 AU970833
(AUS) RUDDER BOOST SYSTEM FAULTY - MAINTENANCE CHECKS OF SYSTEM COULD FIND NO FAULTS									
2731		BEECH B200C	PWA PT6A42			TRIM SYSTEM	MALFUNCTION ELEV TAB CONTROL		6/26/97 AU970834
(AUS) ELEVATOR TRIM FAULTY - MAINTENANCE CHECKS COULD FIND NO FAULTSWITH THE TRIM SYSTEM - SUSPECT CAUSED BY ICING									
2434		BEECH C23	LYC O360A4J	SNSNCH 76EM8S5		BEARING	COLLAPSED DC GENERATOR-ALT		6/3/97 AU970849
(AUS) ALTERNATOR DRIVE END BEARING COLLAPSED									
3234		BEECH 58	CONT IO520C	HARTZL PHCJ3YF2		SELECTOR 363851	BROKEN GEAR SELECTOR		6/20/97 AU970891
(AUS) LANDING GEAR SELECTOR SWITCH SHAFT BROKEN. INSPECTION FOUND LOCATING TANG ON EMERGENCY LANDING GEAR EXTENSION HANDLE ALSO BROKEN AND FORK END TO DRIVE SHAFT DAMAGED. EXTENSION HANDLE HOUSING ALSO CRACKED.									

\*\*\*\*\* DENOTES SIGNIFICANT OCCURRENCE

**INTERNATIONAL SERVICE DIFFICULTY REPORT SUMMARY - AIRCRAFT (cont'd)**

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3260		BEECH 58A	CONT IO520C	MCAULY 3AF34C502		ACTUATOR 0003610121	BROKEN MLG POS SWITCH		6/2/97 AU970712
(AUS) LH MAIN LANDING GEAR MICROSWITCH ACTUATOR STRIKER PLATE BROKEN									
5711		BEECH 58	CONT IO520C			SPAR	CRACKED WING		4/22/97 AU970883
(AUS) WING FORWARD SPAR FORWARD AND REAR RH WEBS CRACKED - FOUND DURING INSPECTION IAW AD/BEECH55/62 AMDT4 AND BEECH SB2269									
5341		CESSNA 172H	CONT O300C	MCAULY 1C172EM	CESSNA	BLOCK 512122	CORRODED WING ATTACH		2/6/97 AU970781
(AUS) FUSELAGE REAR SPAR WING ATTACHMENT BLOCK CRACKED AND CORRODED BETWEEN BLOCKS AND INNER SURFACE OF SPAR									
5341		CESSNA 172H	CONT O300C	MCAULY 1C172EM	CESSNA	BLOCK 512122	CORRODED WING ATTACH		6/20/97 AU970780
(AUS) FUSELAGE REAR SPAR WING ATTACHMENT BLOCK CRACKED AND CORRODED									
5511		CESSNA 172N	LYC O320H2AD	MCAULY 1C160DTM	CESSNA	SPAR 523198	CRACKED HORIZ STAB		6/30/97 AU970784
(AUS) HORIZONTAL STABILISER FORWARD SPAR PNO 0523001-98 AND CENTRE SKIN PNO 0532001-23 CRACKED - SPAR HAD PREVIOUSLY BEEN REPAIRED -FOUND DURING INSPECTION IAW AD/C170/59 AND CESSNA SB 94-8									
2510		CESSNA 182H	CONT O470R	MCAULY 2A34C66		SEAT BELT	UNAPPROVED PART COCKPIT		5/6/97 AU970882
(AUS) SEAT BELT WAS AUTOMOTIVE PRODUCT - PERSONNEL/MAINTENANCE ERROR -UNAPPROVED PART									
5753		CESSNA 182Q			CESSNA	ROLLER T1221115	WORN LT TE FLAP		3/7/97 AU970888
(AUS) LH FLAP ROLLERS PNO T-1221010-5 AND PNO R-0523921X3 WORN - FLAP JAMMED ON TRACK SUPPORT BRACKETS									
7931		CESSNA 182N	CONT O470R	MCAULY 2A34C201		OIL LINE D70009937	CHAFE PRESSURE GAUGE	2250	9/5/94 CA941013204
(CAN) OIL DRIPPING FROM UNDER INST. PANEL & THE RH CONTROL COLUMN, PUSH-PULL TUBE. FIREWALL TO OIL PRESSURE GAUGE ALUMINUM LINE CHAFED THROUGH BY A WIRE FROM THE AIR DUCT HOSE.									
3242		CESSNA 195A	JACOBP R755A2	HAMSTD 2B20	PARKERHANFI KIT19961	PIN 1773	FAULTY BRAKE		5/7/97 AU970762
(AUS) LH BRAKE FAILED. TWO LININGS SEPARATED FROM BACKING PLATE AND WHEEL ASSEMBLY. LH WING TIP, LH ELEVATOR AND STABILISER TIP CONTACTED RUNWAY. INVESTIGATION FOUND THAT THE BRAKE DISCS HAD BEEN GROUND AND WERE APPROXIMATELY 1.524MM (0.060IN) UNDER SIZE.THE AIRCRAFT WAS ON THE FIRST FLIGHT FOLLOWING A PERIODIC INSPECTION. PERSONNEL/MAINTENANCE ERROR									
5520		CESSNA U206G	CONT IO520F	MCAULY D3A32C90		HINGE 12346251	CRACKED ELEV LT OUTB		6/24/97 AU970783
(AUS) LH OUTBOARD ELEVATOR HINGE ASSEMBLY CRACKED ALONG WELD - CRACK LENGTH APPROXIMATELY 8MM (0.314IN)									
2750		CESSNA 208B	PWA PT6A11AG			TRANSMISSION C1450045RX	SLIPPING FLAPS	2281	8/22/94 CA941020010
(CAN) DURING STANDBY SYSTEM TEST, STANDBY MOTOR PUT FLAPS DOWN, BUT ON RETRACT TRANSMISSION SEEMED TO BE SLIPPING.									

\*\*\*\*\* DENOTES SIGNIFICANT OCCURRENCE

**INTERNATIONAL SERVICE DIFFICULTY REPORT SUMMARY - AIRCRAFT (cont'd)**

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2750		CESSNA 208B	PWA PT6A11AG		CESSNA	TRANSMISSION C1450046RX	FAILED FLAPS	179	9/23/94 CA941020008
(CAN) FLAP CIRCUIT BREAKER POPS AFTER 3 SECONDS OF FLAP SELECTION. FLAP TRANSMISSION REPLACED.									
1100		CESSNA 210L	CONT IO520L	MCAULY E2A34C73		MAINTENANCE LOG	INCOMPLETE AIRCFT GEAR DOOR		3/18/97 AU970912
(AUS) LOG BOOK ENTRY INDICATED AN STC HAD BEEN INCORPORATED REGARDING A LANDING GEAR DOOR REMOVAL MODIFICATION - NO DATA ACCOMPANIED THE AIRCRAFT RECORDS AND THERE WAS NO ENGINEERING ORDER AUTHORISING THE STC - NO WEIGHT CHANGES WERE RECORDED IN THE LOG BOOK									
5330		CESSNA 210L	CONT IO520L	MCAULY E2A34C73		SKIN	CORRODED LT FUSELAGE		3/18/97 AU970913
(AUS) LH UPPER FUSELAGE TAILCONE LAP JOINT CORRODED BETWEEN AFT WINDOW AND REAR BULKHEAD - SEVERE INTERNAL CORROSION ADJACENT TO HF ANTENNA CERAMIC INSULATOR									
5512		CESSNA 210L	CONT IO520L	MCAULY E2A34C73		SKIN	SEPARATED HORIZ STAB LE		3/18/97 AU970908
(AUS) STABILISER LEADING EDGE SEPARATED FROM THREE RIBS									
5541		CESSNA 210L	CONT IO520L	MCAULY E2A34C73		RIB	CORRODED RUDDER		3/18/97 AU970909
(AUS) TOP RUDDER RIB AND BALANCE WEIGHT STRUCTURE SEVERELY CORRODED									
5551		CESSNA 210L	CONT IO520L	MCAULY E2A34C73	12324002	BRACKET 123241	CORRODED HORIZ STAB ATT		3/18/97 AU970910
(AUS) HORIZONTAL STABILISER LH AND RH ATTACHMENT BRACKETS PNO 1232400-1 AND PNO 1232400-2 CONTAINED INTERGRANULAR CORROSION									
2820		CESSNA 310R	CONT IO520M	MCAULY 3AF32C87	CESSNA	PIPE R58	MIS-INSTALLED LT & RT FUEL TANK		6/30/97 AU970768
(AUS) FUEL TRANSFER SYSTEM INCORRECTLY FITTED - FUEL LINES TO THE TRANSFER PUMP WERE REVERSED - PROBLEM FOUND IN BOTH RH AND LH FUEL TANKS - PERSONNEL/MAINTENANCE ERROR									
2910		CESSNA 402C	CONT TSIO520VB			VALVE 9911883	FAULTY HYD MANIFOLD		4/15/97 AU970887
(AUS) HYDRAULIC MANIFOLD VALVE FAULTY - DURING STRIPDOWN OF THE VALVE PIECES OF 'O' RING WERE FOUND - SUSPECT 'O' RING CAME FROM THE EMERGENCY GEAR DOWN BOTTLE PNO 9910154-3 (MDR 97/0886)									
3230		CESSNA 402B		MCAULY	CESSNA	BELLCRANK TABS 084340081	WORN MLG		10/2/94 CA941020303
(CAN) AFTER FAILURE OF MLG MOTOR PILOT COULD NOT GET MANUAL EXTENSION SYSTEM TO ENGAGE. MOTOR OPERATED ONE FINAL TIME. TABS ON BELLCRANK THAT ENGAGE EXTENSION SYSTEM WERE FOUND SEVERELY WORN.									
3230		CESSNA 402C	CONT TSIO520VB			VALVE 9911543	BLOWDOWN SYS	1	4/22/97 AU970886
(AUS) LANDING GEAR BLOWDOWN BOTTLE OUTLET VALVE FAULTY - INVESTIGATION FOUND THAT THE 'O' RING ON THE VALVE POPPET ASSEMBLY WAS MISSING- REMAINS OF THE 'O' RING WERE FOUND DOWNSTREAM IN THE EMERGENCY GEAR BLOWDOWN SYSTEM									
3233		CESSNA 402B		MCAULY	ELECTROMECH	MOTOR 99100023	FAILED MLG		10/2/94 CA941020302
(CAN) MLG FAILED TO EXTEND. EVENTUALLY GEAR WENT DOWN. MOTOR FOUND BURNT OUT.									

\*\*\*\*\* DENOTES SIGNIFICANT OCCURRENCE



## INTERNATIONAL SERVICE DIFFICULTY REPORT SUMMARY - AIRCRAFT (cont'd)

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3234		CESSNA 402C	CONT TSIO520VB	MCAULY 3AF32C505	CESSNA	WIRE 42C18	SHORTED GEAR SELECTOR		6/17/97 AU970815
(AUS) LANDING GEAR SELECTOR WIRE SHORT CIRCUITED IN AREA BEHIND INSTRUMENT PANEL									
3240		CESSNA 402C	CONT TSIO520VB	MCAULY 3AF32C511	DUKES 30100	O-RING MS28775132	SPLIT RT BRAKE	155	9/18/94 CA941020304
(CAN) ON LDG ROLL OUT, RT BRAKE PEDAL WENT FLAT. PILOT APPLIED FULL LH BRAKE & AIRCRAFT SPUN AROUND GOING OVER BEDROCK, COLLAPSING RH GEAR & CAUSING SUBSTANTIAL OTHER DAMAGE. "O" RING IN BOTTOM PUCK FOUND BLOWN. CESSNA P/N 10123260.									
5220		CESSNA 402B		MCAULY 3AF32C87		EXIT DOOR	SEPARATED EMERGENCY EXIT		5/19/97 AU970756
(AUS) EMERGENCY EXIT DOOR SEPARATED FROM AIRCRAFT - AIRCRAFT HAD JUST COMPLETED A STRIP AND REPAINT AND IT IS SUSPECTED THAT THE EXIT DOOR HAD BEEN DISTURBED DURING THIS PROCESS									
2910		CESSNA 404CESSNA		MCAULY 3AF34C74		PIPE 5817127	WORN HYDRAULIC		6/9/97 AU970763
(AUS) HYDRAULIC PRESSURE PIPE ATTACHED TO 'T' UNION WORN AND CRACKED									
2823		DHAV DHC2MK1	PWA			SELECTOR VALVE TC17102	SEIZED FUEL		10/2/94 CA941012015
(CAN) FUEL SELECTOR VALVE SHAFT SEIZED SUDDENLY AFTER SELECTION CHANGE.									
2710		DHAV DHC6300	PWA PT6A27	HARTZL HCB3TN3		TUBE ASSY C6CW101911	CRACKED AILERON		4/25/94 CA941017002
(CAN) DURING INSPECTION OF FLIGHT CONTROL RODS AS DETAILED IN CF-80-03R4 SB 6/390 A VISIBLE DEFECT WAS NOTED ON THE FORWARD END OF THE AILERON CONTROL ROD TUBE. CLOSER INSPECTION WITH 16X LENS & LIGHT DEFECT EXTENDS FROM THE SLEEVE INTO THE SWAGED - MAGNEFORMED - AREA FOR ABOUT .125 INCHES. APPEARS TO BE STRESS CORROSION CRACK. DEFECT VERIFIED WITH DYE PENETRANT.									
2720		DHAV DHC6100	PWA PT6A20	HARTZL HCB3TN3		CABLE NAS305354266	FRAYED RUDDER		10/20/94 CA941020301
(CAN) DURING 200 HOUR INSPECTION ON BOTH RUDDER CONTROL CABLES FOUND RIDING ON THE SAME INBOARD GROOVE OF THE FORWARD RUDDER BELLCRANK CAUSING SEVERE FRAYING OF BOTH CABLES. SOME CORROSION ALONG THE LENGTH OF CABLE.									
3610		DHAV DHC6100	PWA PT6A20			CLAMP 44C13	BROKEN BLEED AIR SYSTEM		9/29/94 CA941012002
(CAN) NR1 FIRE WARNING LIGHT CAME ON FOR 15 SECONDS ON TAKEOFF. REJECTED TAKEOFF. FOUND BROKEN CLAMP ON BLEED AIR SUPPLY AT FIREWALL CONNECTION.									
6120		DHAV DHC6300	PWA PT6A27	HARTZL HCB3TN3		PRESSURE SWITCH 8190026	FAULTY LT ENG FEATHER		9/10/94 CA941019008
(CAN) AUTOFEATHER PRESSURE SWITCHES ARMED AT 17 PSIG ON LEFT SIDE BUT WOULD NOT ARM ON RIGHT SIDE UNTIL 22 PSIG. SWITCHES WERE EXCHANGED FROM SIDE TO SIDE WITH THE SAME RESULT SO OVERHAULED SWITCHES WERE INSTALLED. ONE OF THE OVERHAULED SWITCHES WAS FAULTY SO IT WAS REPLACED WITH ANOTHER OVERHAULED ONE WITH SERVICEABLE RESULTS. THE AUTOFEATHER SYSTEM WAS THEN CHECKED SERVICEABLE.									
7810		DHAV DHC6200	PWA PT6A20	HARTZL		DEFLECTOR	CRACKED EXHAUST SYSTEM	10746	10/10/94 CA941020003
(CAN) EXHAUST DEFLECTOR SKI JUMP CRACKED WITH PIECES MISSING. ENGINE REPLACED.									
5313		PIPER PA18150	LYC O320A2B	SNSNCH M74DM		LONGERON	DAMAGED FUSELAGE RT		6/18/97 AU970867
(AUS) FUSELAGE LOWER RH LONGERON BENT AND DIAGONAL TUBE BENT INWARDS									

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**INTERNATIONAL SERVICE DIFFICULTY REPORT SUMMARY - AIRCRAFT (cont'd)**

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2140		PIPER PA23250	LYC IO540C4B5	HARTZL HCE2YK1	JANITROL S50	HEATER CAN 12721697	CRACKED HEATER	365	10/6/94 CA941017006
(CAN) CRACK FOUND AROUND TRANSFER TUBES FROM INNER TO OUTER CAN & AROUND BASE OF EXHAUST STACK.									
2841		PIPER PA23250	LYC IO540K1A5	HARTZL HCC2YK2		INDICATOR 755452	FAULTY FUEL QUANTITY		3/2/97 AU970894
(AUS) RH FUEL GAUGE EMPTY POTENTIOMETER LOOSE IN PC BOARD - INVESTIGATION FOUND POTENTIOMETER HAD BEEN INCORRECTLY SOLDERED TO THE PC BOARD									
3240		PIPER PA28R200	LYC IO360C1A	HARTZL HCC2YK1	PIPER	TORQUE TUBE 6717400	CRACKED RH BRAKE		9/26/94 CA941012011
(CAN) RH BRAKE TORQUE TUBE CRACKED AT THE WELD.									
2731		PIPER PA31350		HARTZL HCE3YR2		CABLE 4173428	DAMAGED ELEV TAB CONT		6/22/97 AU970755
(AUS) ELEVATOR FORWARD TRIM CABLE KINKED IN AREA OF TRIM SERVO PULLEY									
3260		PIPER PA31350		HARTZL HCE3YR2A		LIGHT ASSY 472740	LOOSE RH MLG		10/11/94 CA941019001
(CAN) GEAR SELECTED DOWN & 3 GREENS ON. HOWEVER, ON FINAL, RH LIGHT WAS OUT. GEAR RECYCLED TO NO AVAIL. EMERGENCY EQUIP CALLED OUT & AIRCRAFT LANDED OK. GREEN LIGHT ASSY FOUND LOOSE.									
6120		PIPER PA31T	PWA PT6A28	HARTZL		CABLE 4691802	BROKEN PROP PITCH CONTRL		10/11/94 CA941020004
(CAN) PROP PITCH CONTROL CABLE BROKE RESULTING IN CSU MOVING TO LOW PITCH (MAX RPM) POSITION.									
3211		PIPER PA34200T		MCAULY 3AF34C503		TRUNNION 67415W	DEFECTIVE MLG		6/20/97 AU970779
(AUS) MAIN LANDING GEAR LEG TRUNNION FAULTY - THE FOUR MAIN ATTACHMENT HOLES WERE OVERSIZE COMPARED TO THE FASTENERS - HOLES WERE 7.937MM (0.3125IN) DIAMETER INSTEAD OF 6.35MM (0.25IN)									
3246		PIPER PA34200T		MCAULY 3AF34C503	13836	BEARING 13889	DETERIORATED RT MLG WHEEL		6/20/97 AU970800
(AUS) RH MAIN WHEEL BEARINGS PNO 13889 AND PNO 13836 IN POOR CONDITION- WATER FOUND IN BEARING HOUSING INDICATING AIRCRAFT HAD BEEN SUBJECTED TO WET CONDITIONS									
5280		PIPER PA34200T		MCAULY 3AF34C503		DOOR	DAMAGED GEAR DOOR		6/20/97 AU970778
(AUS) LANDING GEAR DOOR OUTER SKIN SEPARATED FROM INTERNAL STRUCTURE -DAMAGE HAD BEEN COVERED WITH SILASTIC									
7602		PIPER PA34200T	CONT TSIO360E	MCAULY 3AF34C502		BEARING	BINDING MIXTURE CONTROL		5/20/97 AU970915
(AUS) LH ENGINE MIXTURE CONTROL ROD END BEARING AND CONTROL ARM BINDING ON FCU									
5531		PIPER PA36375	LYC IO720D1C			SPAR 9812	CRACKED VERT STAB		1/1/97 AU970933
(AUS) FIN REAR SPAR CRACKED ALLOWING TOP AND MIDDLE RUDDER ATTACHMENT BRACKETS TO SEPARATE									
5541		PIPER PA36375	LYC IO720D1C			SPAR 98126	CRACKED RUDDER		3/19/97 AU970939
(AUS) RUDDER SPAR CRACKED ON BOTH SIDES OF HINGE - HINGE BRACKET PNO76847-02 ALSO CRACKED									

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5311		SOCATA TB10TOBAGO	LYC O360A1A	HARTZL HCC2YK2		FRAME TB121112	CRACKED FUSELAGE		6/20/97 AU970795
(AUS) FUSELAGE FRAME NO9 CRACKED AT TOP RH RADIUS IN AREA ABOVE STABILATOR ATTACHMENT FITTING - FOUND DURING INSPECTION IAW AD/TB10/11/01									
5531		WSK M18DROMADER				REAR SPAR ASSY D33000001	BROKEN VERTICAL FIN	894	9/30/94 CA941017005
(CAN) AFTER INITIAL SPRAY RUN, THE PILOT PULLED UP AND NOTICED THE RUDDER PEDALS STIFFENING AND THEN LOCKING SOLID AND THEN THE ELEVATOR DID THE SAME THING. THE AIRCRAFT WAS LOADED (APPROX 11,500) AND WAS FLYING STABLE. THE PILOT WAS ABLE TO LAND SUCCESSFULLY BY USING AILERONS AND THROTTLES. THE CAUSE OF BROKEN SPAR MAY HAVE BEEN GROUND STRIKE OF VERTICAL STABILIZER.									

(End of INTERNATIONAL SERVICE DIFFICULTY REPORT SUMMARY - AIRCRAFT)

**INTERNATIONAL SERVICE DIFFICULTY REPORT SUMMARY - HELICOPTERS****1/11/98 - 1/17/98 ISSUE: 98-03 ZAC-327**

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2913		BELL 206B	ALLSN 250C20B		ROMEC 206076022	COUPLING RD24336	FAILED HYDRAULIC PUMP		6/28/97 AU970787
(AUS) HYDRAULIC PUMP DRIVE COUPLING FAILED									
5302		BELL 206L3	ALLSN 250C30P			FITTING 206031329101	CRACKED TAILBOOM	2891	10/5/94 CA941019009
(CAN) DURING THE 100 HOUR INSPECTION, THE UPPER LEFT FUSELAGE TAILBOOM FITTING WAS FOUND CRACKED. THE FITTING WAS REPLACED. THE REMOVED FITTING WAS SENT TO BELL HELICOPTER FOR EVALUATION.									
5311		BELL 206L3	ALLSN 250C30P			FRAME 206032308003	CRACKED TAILBOOM	3891	10/5/94 CA941019010
(CAN) DURING THE 100 HOUR INSPECTION AND REPLACEMENT OF THE UPPER LEFT FUSELAGE TAILBOOM FITTING, THE FRAME WAS FOUND CRACKED IN THE AREA AROUND THE TWO (2) UPPER BOLT HOLES.									
6320		BELL 206B	ALLSN 250C20B		BELL	BEARING 264321	SPALLED M/R GEARBOX		6/25/97 AU970898
(AUS) MAIN ROTOR TRANSMISSION DUPLEX BEARING SPALLED - METALCONTAMINATION OF GEARBOX									
6320		BELL 206B	ALLSN			MAGNETIC SEAL 206040156101	LEAKING M/R TRANSMISSION	235	9/15/94 CA941018010
(CAN) TRANSMISSION MAGNETIC INPUT SEAL, FOUND TO BE LEAKING AFTER 235 HOURS. SEAL REPLACED.									
6410		BELL 206B3	ALLSN 250C20B		BELL	BLADE 261621131	DELAMINATED TAIL ROTOR		6/22/97 AU970841
(AUS) TAIL ROTOR BLADE DELAMINATED IN DOUBLER AREA									
7400		BELL 206B	ALLSN			RELAY SWITCH 7G580	DEFECTIVE AUTO RELIGHT		6/15/94 CA941018011
(CAN) THE AUTO-RELIGHT SWITCH WAS FOUND TO HAVE A DEFECTIVE RELAY. IT WORKED ONLY ON AN INTERMITTENT BASIS. THE SWITCH WAS REPLACED.									
6320		BELL 212	PWA PT6T3B		PWA	COMBINING GEARBX 3024780	MAKING METAL M/R DRIVE	7640 1021	9/17/94 CA941019003
(CAN) CENTRE OIL SYSTEM OIL FILTER REMOTE INDICATOR FOUND POPPED DURING PRE-FLIGHT INSPECTION. FILTER ELEMENT (CENTRE) REMOVED & FOUND VERY CONTAMINATED WITH FINE ALUMINUM PARTICLES. NO BRASS OR FERROUS PARTICLES IN EVIDENCE. NO CONTAMINATION FOUND IN EITHER POWER SECTION OIL SYSTEM. GEARBOX REMOVED & SENT FOR INVESTIGATION.									
7261		BELL 222U	LYC LTS101750C1		RR369004	PUMP 51663	FAILED LT ENGINE OIL		4/20/97 420 AU970881
(AUS) LH ENGINE DRIVEN OIL PUMP FAULTY. OIL PRESSURE FLUCTUATING.									
7210		BELL 412	PWA PT6T3B		PWA	BEARING 314166A	SPALLED RED GRBOX NR 10		4/25/97 2416 AU970750
(AUS) RH REDUCTION GEARBOX NR10 BEARING SPALLED ON BALLS AND INNER AND OUTER RACES - LH REDUCTION GEARBOX NR10 BEARING HAD SLIGHT SPALLING ON THE INNER RACE AND DENTS ON THE BEARING SPLIT LINEEDGE									
1100		BELL 47G3B1	LYC VO435A1F			DATA PLATE	INCORRECT DATA AIRCRAFT MAINT		5/8/97 AU971105
(AUS) SUSPECT INCORRECT DATA PLATE FITTED TO HELICOPTER. AIRCRAFT HAD BEEN EXTENSIVELY REBUILT IN 1989. PERSONNEL/MAINTENANCE ERROR.									

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**INTERNATIONAL SERVICE DIFFICULTY REPORT SUMMARY - HELICOPTERS (cont'd)**

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2622		BELL 47G3B1	LYC VO435A1F			EXTINGUISHER	UNAPPROVED PART FIRE BOTTLE		5/8/97 AU971112
(AUS) UNAPPROVED TYPE OF DRY POWDER FIRE EXTINGUISHER FITTED. UNAPPROVED PART.									
6710		BELL 47G3B1	LYC VO435A1F			BEARING KSP5	WORN M/R CYCLIC		5/23/97 AU971106
(AUS) LATERAL CYCLIC TORQUE TUBE FORWARD SUPPORT BEARING WORN.									
2551		BOLKMS BO105C	ALLSN 250C20B			CABLE ASSY 145122	SEPARATED SWAGED END		9/15/94 CA941020009
(CAN) CABLE, AT SWAGED END, SEPARATED COMPLETELY WHILE UNDER LOAD.									
3212		BOLKMS BO105S	ALLSN 250C20B			FLOAT BOTTLE D177431	DEPRESSURIZED SQUIB		9/20/94 CA941012003
(CAN) PILOT REPORTED THAT SHORTLY AFTER TAKEOFF, WHILE CLIMBING TO 1500 FEET AGL, THE POP OUT FLOATS SELF-DEPLOYED. HE STATED THE "FLOAT-ARMED" SWITCH WAS IN THE "ARMED" POSITION AND THAT BOTH "FLOAT DEPLOY" SWITCHES WERE IN THE GUARDED POSITION. HE RETURNED TO BASE WHERE THE FLOATS WERE REMOVED AND THE ELECTRICAL CIRCUITRY WAS TESTED EXTENSIVELY WITH NO FAULT FOUND.									
6210		BOLKMS BO105S	ALLSN 250C20B			BLADE 10515150	DEBONDING M/R NR2	3209 1616	9/28/94 CA941012016
(CAN) M/R BLADE HAS DEBONDING OF EROSION PROTECTIVE SHELL, INBOARD SECTION, AT OUTER END OF SHELL AT THE SCARF JOINT. DEBONDING AND LIFTING OF SHELL FROM LEADING EDGE TO OUTER EDGE OF SPANWISE OUTER EDGE AND ALONG THE SPANWISE EDGE TOWARD THE BLADE ROOT, 60MM LONG.									
6320		HILLER UH12E	LYC VO540C2A	HILLER		GEAR 23529	DAMAGED M/R GEARBOX		6/14/97 535 AU970991
(AUS) MAIN ROTOR TRANSMISSION UPPER PLANETARY RING GEAR TOOTH CHIPPED - MINOR DAMAGE TO ONE UPPER PLANETARY GEAR									
6320		HUGHES 369E				DETECTOR VALVE B3148A	CRACKED M/R TRANSMISSION		9/28/94 CA941019002
(CAN) BOTH CHIP DETECTOR PLUG VALVES WERE FOUND CRACKED AROUND THE CIRCUMFERENCE OF THE VALVE. THE CRACKS ARE APPARENTLY UNDER THE O-RING. CRACK WAS CAUSED MOST LIKELY BY OVER-TORQUING THE VALVE DURING INSTALLATION.									
6320		ROBSIN R22BETA	LYC O320B2C		ROBSIN A0061	TRANSMISSION A61	MAKING METAL M/R GEARBOX		4/20/97 AU970884
(AUS) MAIN ROTOR TRANSMISSION METAL CONTAMINATION. SUSPECT CAUSED BY FATIGUE SPALLING OF PINION AND RING GEARS.									
6320		ROBSIN R22BETA	LYC O320B2C		ROBSIN	GEAR 2222	FAULTY M/R GEARBOX		6/29/97 627 AU970817
(AUS) MAIN ROTOR TRANSMISSION GEAR FAULTY - METAL CONTAMINATION OF CHIP DETECTOR									
6210		SKRSKY S61N	GE			BLADE 6117020201067	DEBONDED MAIN ROTOR	5160	9/15/94 CA941020005
(CAN) WHILE IN CRUISE, AIRCRAFT DEVELOPED A VERTICAL 1:1 WITH A 6-8" OUT OF TRACK CONDITION ACCOMPANIED BY A SWISHING SOUND. AIRCRAFT MADE A PRECAUTIONARY LANDING TO INVESTIGATE. INSPECTION FOUND THE RED BLADE POCKET NR17 SKIN PARTIALLY DEBONDED AT THE SPAR. BLADE REPLACED AND BEING SENT TO SIKORSKY FOR REPAIR									
3230		SKRSKY S76A	TMECA ARRIEL1S			LANDING GEAR	MALFUNCTION GEAR RETRACT		4/20/97 AU970775
(AUS) LANDING GEAR WOULD NOT RETRACT - SUSPECT INTERMITTENT PROBLEM CAUSED BY THERMAL EXPANSION									

\*\*\*\*\* DENOTES SIGNIFICANT OCCURRENCE

ATA OPER	REG. NO SERIAL NO	ACFT MAKE ACFT MODEL	ENG MAKE ENG MDL	PROP MAKE PROP MDL	COMP MFG COMP MDL	PART NAME PART NUMBER	PART COND PART LOC.	TT TSO	DIFF. DATE OPER CONT NO
6410		SNIAS AS350B	TMECA ARRIEL1B			BLADE 355A1244	DELAMINATED TAIL ROTOR		6/30/97 AU970788
(AUS) TAIL ROTOR BLADE LEADING EDGE EROSION STRIP DELAMINATED (DEBONDED) - DEBONDING EXTENDS SPANWISE FROM AN AREA 105MM(4.13IN) FROM THE INBOARD END OF THE STRIP TO 98MM (3.85IN) FROM THE OUTBOARD END AND CHORDWISE FROM THE TRAILING EDGE TO 25MM (1IN) TOWARDS THE LEADING EDGE									

(End of INTERNATIONAL SERVICE DIFFICULTY REPORT SUMMARY - HELICOPTERS)

**INTERNATIONAL SERVICE DIFFICULTY REPORT SUMMARY - ENGINES**

1/11/98 - 1/17/98 ISSUE: 98-03 ZAC-327

ATA OPER	REG. NO SERIAL NO	ACFT MAKE ACFT MODEL	ENG MAKE ENG MDL	PROP MAKE PROP MDL	COMP MFG COMP MDL	PART NAME PART NUMBER	PART COND PART LOC.	TT TSO	DIFF. DATE OPER CONT NO
8530		BEECH C23	LYC O360A4J	SNSNCH 76EM8S5	CONT	VALVE	DAMAGED NR 3 CYL EXH		6/3/97 AU970850
(AUS) NO3 CYLINDER EXHAUST VALVE HEAD DAMAGED - APPROXIMATELY 50% OF THE HEAD WAS MISSING									
8530		BEECH F33A	CONT IO520BB	MCAULY	CONT	PISTON PIN 630046	WORN NR1 CYLINDER	1350	10/6/94 CA941017004
(CAN) DURING INSPECTION A HIGH AMOUNT OF ALUMINUM WAS FOUND IN THE ENGINE OIL FILTER. AN INSPECTION OF THE CYLINDERS WAS CARRIED OUT & IT WAS FOUND THE NR 1 CYLINDER PISTON PIN HAD BROKEN & LED TO THE ALUMINUM IN THE OIL FILTER. THE PISTON PIN & CYLINDER WERE REPLACED. THERE WAS NO WAY TO DETERMINE THE CAUSE OF THE PISTON PIN FAILURE.									
7414		BEECH 76	LYC O360A1G		BENDIX D4LN3000	DISTRIBUTOR 10682014	STRIPPED MAGNETO		6/8/97 15 AU970681
(AUS) MAGNETO PLASTIC DISTRIBUTOR GEAR TEETH STRIPPED									
7261		BELL 222U	LYC LTS101750C1		RR369004	PUMP 51663	FAILED LT ENGINE OIL		4/20/97 420 AU970881
(AUS) LH ENGINE DRIVEN OIL PUMP FAULTY. OIL PRESSURE FLUCTUATING.									
7210		BELL 412	PWA PT6T3B		PWA	BEARING 314166A	SPALLED RED GRBOX NR 10		4/25/97 2416 AU970750
(AUS) RH REDUCTION GEARBOX NR10 BEARING SPALLED ON BALLS AND INNER AND OUTER RACES - LH REDUCTION GEARBOX NR10 BEARING HAD SLIGHT SPALLING ON THE INNER RACE AND DENTS ON THE BEARING SPLIT LINE EDGE									
7322		CESSNA 180H	CONT O470R	MCAULY 2A34C203	FACET MA45	FLOAT LEVER 3235	WORN CARBURETOR	1775	7/16/94 CA941012005
(CAN) THE ENGINE BEGAN TO RUN ROUGH & LOSE POWER ON TAKEOFF, WITH BLACK SMOKE COMING FROM THE EXHAUST. A PRESSURE CHECK OF THE CARBURETOR REVEALED THE FLOAT/NEEDLE VALVE ASSEMBLY WAS NOT CONTROLLING THE FUEL FLOW INTO THE CARBURETOR, RESULTING IN AN EXCESSIVELY RICH ENGINE FUEL MIXTURE. DISASSEMBLY REVEALED SIGNIFICANT WEAR ON THE FLOAT LEVER SHAFT WHICH ALLOWED THE FLOATS TO INTERMITTENTLY CONTACT THE COMPARTMENT COVER.									
8530		CESSNA A185F	CONT IO520D	MCAULY D2A34C58	CONT	CYLINDER	CRACKED TOP PLUG	343	9/6/94 CA941011104
(CAN) CYLINDER FOUND CRACKED FROM TOP SPARK PLUG AROUND OUTSIDE OF CYLINDER TO INTAKE FLANGE. CYLINDER HAD BEEN REPAIRED IN SAME AREA BEFORE AT OVERHAUL.									
7414		CESSNA U206F	CONT IO520F	MCAULY D3A32C90	SLICK 662	IMPULSE COUPLING M2369	INCORRECT ASSY MAGNETO		5/19/97 AU970893
(AUS) MAGNETO IMPULSE COUPLING INCORRECTLY ASSEMBLED									
7314		CESSNA 310R	CONT IO520M			PUMP 64621217A1	WORN ENGINE FUEL PUMP		6/24/97 AU970770
(AUS) ENGINE DRIVEN FUEL PUMP VANES DAMAGED. SMALL PORTIONS OF THE PUMP BLADES LODGED IN THE RELIEF VALVE									
8520		DHAV DHC2EVANS	PWA R985AN14B		PWA	BOLT 23112	FAILED CTRWT RETAIN		6/16/97 AU970853
(AUS) ENGINE FAILED - CAUSED BY FAILURE OF THE COUNTERWEIGHT RETAINING BOLT ALLOWING COUNTERWEIGHT TO DEPART CRANKSHAFT AND SEIZE THE ENGINE									

## INTERNATIONAL SERVICE DIFFICULTY REPORT SUMMARY - ENGINES (cont'd)

1/11/98 To 1/17/98 ISSUE: 98-03 ZAC-327

ATA OPER	REG. NO SERIAL NO	ACFT MAKE ACFT MODEL	ENG MAKE ENG MDL	PROP MAKE PROP MDL	COMP MFG COMP MDL	PART NAME PART NUMBER	PART COND PART LOC.	TT TSO	DIFF. DATE OPER CONT NO
8520		DHAV DHC2MK1	PWA R985AN14B	HAMSTD 2D30		CRANKCASE 16475	CRACKED NR2 CYL FLANGE	1400 938	8/21/94 CA941009101
(CAN) AIRCRAFT WAS GROUNDED DUE TO EXCESSIVE OIL LEAK ON RIGHT HAND SIDE OF ENGINE. INSPECTION FOUND A CRACKED CRANKCASE. THE CRACK WAS NOTED ON NR2 CYLINDER FLANGE (REAR) OF APPROXIMATELY 3/8" VISIBLE. UPON REMOVAL OF NR2 CYLINDER THE CRACK WAS FOUND TO RADIATE IN TOWARDS THE MAIN BEARING WITHIN TWO INCHES FROM THE BEARING BOSS THEN OUTWARD TOWARDS BUT NOT TO THE SURFACE OF NR8 CYLINDER. IT TOTAL 24 INCHES IN LENGTH. CAUSE WAS NOT DETERMINED.									
8520		DHAV DHC3	PWA R1340*			CAMSHAFT	FAILED ENGINE	330	9/12/94 CA941012014
(CAN) CAMSHAFT FAILED. ENGINE REPLACED DUE TO FAILURE OF OTHER COMPONENTS AT 360.57 HOURS.									
7414		PARTEN P68B	LYC IO360A1B6	HARTZL HCC2YK2	SLICK 4372	CAPACITOR M381	BURNT MAGNETO		6/30/97 AU970948
(AUS) MAGNETO CAPACITOR AND POINTS BURNT - FOUND DURING INSPECTION IAWAD/ELECT/46 AMDT 6									
8550		PIPER PA28236	LYC O540J3A5	HARTZL HCF2YR1		VALVE 76539	WORN ENG OIL FILTER		6/30/97 49 AU970769
(AUS) ENGINE OIL FILTER VALVE STUCK - FILTER COLLAPSED AND FILTER HOUSING BASE GASKET BLEW OUT - SUSPECT CAUSED BY COLD MORNING STARTS (VISCOUS OIL) AND POOR STARTING TECHNIQUES									
8530		PIPER PA31350	LYC TIO540J2BD	HARTZL HCE3YR2A	LYC	CYLINDER LW12966	FAILED EXH VALVE	1106 1206	9/20/94 CA941018006
(CAN) THE FACE BROKE FROM THE VALVE STEM & CONTINUED THROUGH THE ENGINE, CAUSING METAL DAMAGE THROUGHOUT.									
8530		PIPER PA34200T	CONT TSIO360E	MCAULY 3AF34C503		CYLINDER 64137	DISTORTED NR 2 - 4 &6		6/20/97 780 AU970799
(AUS) NO6 CYLINDER EXHAUST FLANGE DISTORTED - 2MM (0.078IN) GAP ON FORWARD SIDE - FURTHER INVESTIGATION FOUND NO2 AND NO4 CYLINDERS WITH APPROXIMATELY 1MM (0.039IN) GAPS - HEAT DAMAGE TO ENGINE COWLS FROM LEAKING EXHAUST GASSES - NEW GASKETS HAD BEEN FITTED APPROXIMATELY 50 HOURS PREVIOUSLY									

(End of INTERNATIONAL SERVICE DIFFICULTY REPORT SUMMARY - ENGINES)



**INTERNATIONAL SERVICE DIFFICULTY REPORT SUMMARY - COMPONENTS****1/11/98 - 1/17/98 ISSUE: 98-03 ZAC-327**

ATA OPER	REG. NO SERIAL NO	ACFT MAKE ACFT MODEL	ENG MAKE ENG MDL	PROP MAKE PROP MDL	COMP MFG COMP MDL	PART NAME PART NUMBER	PART COND PART LOC.	TT TSO	DIFF. DATE OPER CONT NO
2562		BEECH 58	CONT IO520C	MCAULY 3AF34C502		ELT ELT114	CORRODED EMERG LOCATOR		4/12/97 AU970880
(AUS) ELT COMPLETELY DESTROYED DUE TO BUILDUP OF WATER IN MOUNTING TRAY - WATER IN TRAY GETS INTO ELT BATTERY COMPARTMENT CAUSING CORROSION AND EVENTUAL FAILURE									
2562		CESSNA 310R	CONT IO520M	MCAULY 3AF32C87		ELT ELT114	FAILED EMERG LOCATOR		5/29/97 AU970859
(AUS) ARTEX ELT CRACKED AND BATTERY LEAKING CAUSING CORROSION - ELT HAD ONLY BEEN FITTED ON 27 FEB 1997 FOLLOWING SIMILAR CRACKING OF THE PREVIOUS ELT									
2562		CESSNA 402C	CONT TSIO520VB	MCAULY 3AF32C505	ELT1104	BATTERY ELT114	CRACKED EMERG LOCATOR		6/20/97 AU970801
(AUS) ELT BATTERY PACK CRACKED AND LEAKING - ELT BATTERY MOUNTING TRAY AND STRUCTURE BENEATH ELT CONTAMINATED									
2350		CESSNA 404CESSNA		MCAULY 3FF32C501		TRANSCEIVER	FAILED MIC JACK		5/31/97 AU970844
(AUS) RADIO FAILED TO TRANSMIT - CORROSION ON MICROPHONE JACK CONTACTS									
6122		CESSNA 404CESSNA		MCAULY 3FF32C501		GOVERNOR DCFS29D2AT	OUT OF ADJUST PROPELLER		5/10/97 AU970885
(AUS) PROPELLER GOVERNOR HIGH RPM OUT OF ADJUSTMENT									
6113		PIPER PA31	LYC TIO540A1A	HARTZL HCE3YR2		NUT	LOOSE PROP SPINNER		5/8/97 AU970752
(AUS) LH PROPELLER SPINNER FORWARD SECURING NUT LOOSE AND LOCKWIRE BROKEN - THREAD ON STUD STRIPPED									
(End of INTERNATIONAL SERVICE DIFFICULTY REPORT SUMMARY - COMPONENTS)									

ATA OPER	REG. NO SERIAL NO	ACFT MAKE ACFT MODEL	ENG MAKE ENG MDL	PROP MAKE PROP MDL	COMP MFG COMP MDL	PART NAME PART NUMBER	PART COND PART LOC.	TT TSO	DIFF. DATE OPER CONT NO
6114		CESSNA 404CESSNA		MCAULY 3FF32C501		SCREW	LOOSE RT PROP HUB		5/18/97 AU970890
(AUS) RH PROPELLER DOME SCREWS LOOSE - SCREWS WERE CORRECTLY LOCKWIRED- FIVE OF THE SCREWS HAD SHEARED HEADS - SUSPECT SCREWS INCORRECTLY TORQUED AT LAST OVERHAUL OR SHOP VISIT -PERSONNEL/MAINTENANCE ERROR									

(End of INTERNATIONAL SERVICE DIFFICULTY REPORT SUMMARY - PROPELLERS)



U.S. Department  
of Transportation  
**Federal Aviation  
Administration**

## **SERVICE DIFFICULTY REPORT SUMMARY**

### **GENERAL AVIATION - INDEX**



The following information provides a tally of the Service Difficulty Reports (SDR's) contained in this weeks issue of the General Aviation SDR Summary. The totals represent only a summation of the SDR's that were submitted to the FAA, Aviation Data Systems Branch, AFS-620, and processed in time for inclusion in the Summary. The first table is a tally of the number of SDR's submitted through the indicated Flight Standards District Office (FSDO). The second table sorts the SDR's by the aircraft or equipment make and model. The heading at the top of each table provides a two digit Joint Aircraft System/Component (JASC) code grouping (e.g., JASC codes 1100 thru 1800 are represented by the heading labeled 11-18) which categorizes in general, the problem areas for each reported discrepancy.

The Flight Standards Service Difficulty Program objective is to achieve prompt and appropriate correction of conditions adversely affecting continued airworthiness of aeronautical products. This is accomplished by the collection of Service Difficulty and Malfunction or Defect Reports. SDR's are consolidation and collation into common data base where they are analyzed for trends, problems, and alert information. This information is then disseminated to the appropriate segments of the aviation community and to other FAA offices.

The number of SDR's submitted is not an indicator of the mechanical reliability or fitness of an air carrier's aircraft fleet and should not be used as such. The air carriers certificate holding office has the primary responsibility for planning, programming evaluations, and assessing the performance of operators. Questions regarding an air carrier's fleet performance should be directed to the appropriate Flight Standards District Office, Certificate Management Office, or Certificate Management Unit.

**GENERAL AVIATION SUMMARY INDEX BY DISTRICT OFFICE****1/11/98 To 1/17/98    ISSUE: 98-03    ZAC-327**

DISTRICT OFFICE		SDR TOTALS BY FAA ATA SYSTEM CHAPTER								TOTAL
		11-18	21-29	30-38	45-49	51-57	61-67	71-79	80-85	
AL	03	0	0	2	0	0	0	0	1	3
AU	S	2	15	8	0	19	11	7	4	66
CA		0	7	7	0	4	7	6	5	36
CE	01	0	1	0	0	0	0	0	0	1
EA	21	0	1	0	0	0	0	1	0	2
GL	03	0	0	0	0	0	51	0	0	51
GL	25	0	0	1	0	0	0	1	0	2
NE	03	0	0	2	0	0	0	0	0	2
NM	08	0	1	0	0	0	0	0	0	1
NM	09	0	3	0	0	0	0	0	0	3
NM	13	0	1	0	0	0	0	1	0	2
SO	03	0	0	0	0	0	0	2	0	2
SO	17	0	0	0	0	0	1	0	0	1
SW	01	0	1	0	0	10	1	1	0	13
SW	02	0	0	0	0	1	0	0	0	1
SW	05	0	2	0	0	0	0	0	0	2
SW	11	0	0	0	0	0	0	1	0	1
SW	15	0	0	0	0	0	0	0	1	1
SW	17	0	0	1	0	0	0	0	0	1
WP	07	0	3	0	0	0	2	0	0	5
<b>TOTALS</b>		<b>2</b>	<b>35</b>	<b>21</b>	<b>0</b>	<b>34</b>	<b>73</b>	<b>20</b>	<b>11</b>	<b>196</b>

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(End of GENERAL AVIATION SUMMARY INDEX by DISTRICT OFFICE Report)

**GENERAL AVIATION SUMMARY INDEX by MANUFACTURER MAKE and MODEL****1/11/98 To 1/17/98    ISSUE: 98-03    ZAC-327**

AIRCRAFT MAKE	AIRCRAFT MODEL	SDR TOTALS BY FAA ATA SYSTEM CHAPTER								TOTAL
		11-18	21-29	30-38	45-49	51-57	61-67	71-79	80-85	
AMTRMX	XP503	0	0	0	0	0	1	0	0	1
AYRES	S2RT34NORMAL	0	0	0	0	1	0	0	0	1
AYRES	S2RT65	0	0	0	0	1	0	0	0	1
BBAVIA	8KCAB	0	0	0	0	1	0	0	0	1
BEECH	100BEECH	0	0	0	0	1	0	2	0	3
BEECH	100BEECH	0	0	0	0	0	1	0	0	1
BEECH	200BEECH	0	0	1	0	0	0	0	0	1
BEECH	200BEECH	0	0	0	0	0	3	0	0	3
BEECH	58	0	1	1	0	1	0	0	0	3
BEECH	58A	0	0	1	0	0	0	0	0	1
BEECH	76	0	0	0	0	0	0	2	0	2
BEECH	95B55	0	0	0	0	0	1	0	0	1
BEECH	A100	0	0	0	0	0	1	0	0	1
BEECH	B200	0	1	0	0	0	0	0	0	1
BEECH	B200C	0	2	0	0	0	0	0	0	2
BEECH	B90	0	0	0	0	0	1	0	0	1
BEECH	C23	0	1	0	0	0	0	0	1	2
BEECH	C90	0	0	1	0	0	0	0	0	1
BEECH	F33A	0	0	0	0	0	0	0	1	1
BEECH	V35	0	0	0	0	0	1	0	0	1
BEECH	V35A	0	1	0	0	0	0	0	0	1
BELL	206B	0	0	0	0	0	1	1	0	2
BELL	206B	0	1	0	0	0	1	0	0	2
BELL	206B3	0	0	0	0	0	1	0	0	1
BELL	206L3	0	0	0	0	2	0	0	0	2
BELL	212	0	0	0	0	0	1	0	0	1
BELL	222U	0	0	0	0	0	0	1	0	1

AIRCRAFT MAKE	AIRCRAFT MODEL	SDR TOTALS BY FAA ATA SYSTEM CHAPTER								TOTAL
		11-18	21-29	30-38	45-49	51-57	61-67	71-79	80-85	
BELL	412	0	0	0	0	0	0	1	0	1
BELL	47G2	0	0	0	0	0	1	0	0	1
BELL	47G3B1	1	1	0	0	0	1	0	0	3
BOLKMS	BK117C1	0	1	0	0	0	0	0	0	1
BOLKMS	BO105C	0	1	0	0	0	0	0	0	1
BOLKMS	BO105S	0	0	1	0	0	1	0	0	2
CESSNA	170	0	1	0	0	0	0	1	0	2
CESSNA	172	0	0	0	0	0	2	0	0	2
CESSNA	172G	0	1	0	0	0	0	0	0	1
CESSNA	172H	0	0	0	0	2	0	0	0	2
CESSNA	172N	0	0	0	0	1	0	0	0	1
CESSNA	172R	0	3	0	0	0	0	0	0	3
CESSNA	172R	0	3	0	0	0	0	0	0	3
CESSNA	172RG	0	0	1	0	0	0	0	0	1
CESSNA	180H	0	0	0	0	0	0	1	0	1
CESSNA	182	0	0	0	0	0	1	0	0	1
CESSNA	182E	0	0	0	0	0	1	0	0	1
CESSNA	182H	0	1	0	0	0	0	0	0	1
CESSNA	182J	0	1	0	0	0	0	0	0	1
CESSNA	182N	0	0	0	0	0	0	1	0	1
CESSNA	182Q	0	0	0	0	1	0	0	0	1
CESSNA	195A	0	0	1	0	0	0	0	0	1
CESSNA	208B	0	2	0	0	0	0	0	0	2
CESSNA	210L	1	0	0	0	4	0	0	0	5
CESSNA	310	0	0	0	0	0	3	0	0	3
CESSNA	310Q	0	0	0	0	0	2	0	0	2
CESSNA	310R	0	2	0	0	0	3	1	0	6

AIRCRAFT MAKE	AIRCRAFT MODEL	SDR TOTALS BY FAA ATA SYSTEM CHAPTER								TOTAL
		11-18	21-29	30-38	45-49	51-57	61-67	71-79	80-85	
CESSNA	320C	0	0	0	0	0	1	0	0	1
CESSNA	340A	0	0	0	0	0	3	0	0	3
CESSNA	401A	0	0	0	0	0	2	0	0	2
CESSNA	402B	0	0	0	0	0	0	1	0	1
CESSNA	402B	0	0	2	0	1	2	0	0	5
CESSNA	402C	0	2	3	0	0	0	0	0	5
CESSNA	404CESSNA	0	2	0	0	0	3	0	0	5
CESSNA	414	0	0	0	0	11	4	0	0	15
CESSNA	421	0	0	0	0	0	1	0	0	1
CESSNA	421A	0	0	0	0	0	2	0	0	2
CESSNA	421B	0	0	0	0	0	1	0	0	1
CESSNA	421C	0	0	0	0	0	1	0	0	1
CESSNA	425	0	0	0	0	0	1	0	0	1
CESSNA	441	0	0	1	0	0	0	0	0	1
CESSNA	A185F	0	0	0	0	0	0	0	1	1
CESSNA	T210M	0	0	0	0	0	1	0	0	1
CESSNA	T303	0	0	0	0	0	1	0	0	1
CESSNA	TU206G	0	1	0	0	0	0	0	0	1
CESSNA	U206F	0	0	0	0	0	0	1	0	1
CESSNA	U206G	0	0	0	0	1	0	0	0	1
DHAV	DHC2EVANS	0	0	0	0	0	0	0	1	1
DHAV	DHC2MK1	0	1	0	0	0	0	0	1	2
DHAV	DHC3	0	0	0	0	0	0	0	1	1
DHAV	DHC6100	0	1	0	0	0	0	0	0	1
DHAV	DHC6100	0	0	1	0	0	0	0	0	1
DHAV	DHC6200	0	0	0	0	0	0	1	0	1
DHAV	DHC6300	0	1	0	0	0	1	0	0	2

AIRCRAFT MAKE	AIRCRAFT MODEL	SDR TOTALS BY FAA ATA SYSTEM CHAPTER								TOTAL
		11-18	21-29	30-38	45-49	51-57	61-67	71-79	80-85	
HILLER	UH12E	0	0	0	0	0	1	0	0	1
HUGHES	369E	0	0	0	0	0	1	0	0	1
HUGHES	500N	0	0	0	0	0	2	0	0	2
MTSBSI	MU2*	0	0	0	0	0	2	0	0	2
PARTEN	P68B	0	0	0	0	0	0	1	0	1
PARTEN	P68TCOBS	0	0	0	0	0	0	1	0	1
PIPER	PA18150	0	0	1	0	1	1	0	0	3
PIPER	PA23250	0	1	0	0	0	0	0	0	1
PIPER	PA23250	0	1	0	0	0	0	0	0	1
PIPER	PA28236	0	0	0	0	0	0	0	1	1
PIPER	PA28R180	0	0	0	0	0	0	2	0	2
PIPER	PA28R200	0	0	1	0	0	0	0	0	1
PIPER	PA28R201T	0	0	0	0	0	1	0	0	1
PIPER	PA31	0	0	0	0	0	3	0	0	3
PIPER	PA31310	0	0	0	0	0	2	0	0	2
PIPER	PA31350	0	0	1	0	0	0	0	1	2
PIPER	PA31350	0	1	0	0	0	1	0	0	2
PIPER	PA31T	0	0	0	0	0	1	0	0	1
PIPER	PA31T	0	0	0	0	0	1	0	0	1
PIPER	PA32301	0	0	1	0	0	0	0	1	2
PIPER	PA32301T	0	0	0	0	0	1	0	0	1
PIPER	PA34200T	0	0	2	0	1	0	1	1	5
PIPER	PA36375	0	0	0	0	2	0	0	0	2
PIPER	PA46310P	0	0	0	0	0	0	1	0	1
ROBSIN	R22BETA	0	0	0	0	0	2	0	0	2
SCWZER	G164B	0	0	0	0	0	0	0	1	1
SKRSKY	S61N	0	0	0	0	0	1	0	0	1



AIRCRAFT MAKE	AIRCRAFT MODEL	SDR TOTALS BY FAA ATA SYSTEM CHAPTER								TOTAL
		11-18	21-29	30-38	45-49	51-57	61-67	71-79	80-85	
SKRSKY	S76A	0	0	1	0	0	0	0	0	1
SNIAS	AS350B	0	0	0	0	0	1	0	0	1
SOCATA	TB10TOBAGO	0	0	0	0	1	0	0	0	1
WSK	M18DROMADER	0	0	0	0	1	0	0	0	1
TOTALS		2	35	21	0	34	73	20	11	196

(End of AIR CARRIER SUMMARY INDEX by OPERATOR Report)

# JOINT AIRCRAFT SYSTEM/COMPONENT CODE TABLE

## PREFACE

The Joint Aircraft System/Component (JASC) Code Table is a modified version of the Air Transport Association of America (ATA), Specification 100 code. It was developed by the Federal Aviation Administration's (FAA), Aviation Data Systems Branch (AFS-620). Technical support was provided by the Galaxy Scientific Corporation, and various representatives of the air carrier and general aviation community.

Over the past four years, the JASC format of the ATA Spec 100 code has gained widespread industry acceptance. In a harmonized effort, the FAA's counterparts in Australia and Canada have adopted the JASC code with only a few exceptions. Some Canadian aircraft manufacturers have also recently adopted this new standard.

This code table is constructed by using the new JASC four (4) digit code, along with an abbreviated code title. The abbreviated titles have been modified in some cases to clarify the intended use of the accompanying code. This table can be used as a quick reference chart, to assist in the coding and review of aircraft structures or systems data (i.e., Service Difficulty Report (SDR), Accident/Incident Report).

The current coding scheme used in the JASC code was introduced in May 1991, for the technical classification of SDR's. Its predecessor, the FAA aircraft system/component code, was a similar but more complex eight-digit code which was developed over 25 years ago. It was constructed around the computer technology of that period. It consisted of a four digit numerical code plus a four alpha character code to make data retrieval possible. Since that time, computer technology has advanced many fold. Reducing the code from eight to four characters simplifies coding, and in some cases, makes JASC coding match the ATA Specification 100 first three digits, which are used to identify aircraft systems. The ATA code does not reference the fourth digit, so it is free to be used for identifying components.

The JASC code aircraft structural section has increased due to problems inherent with aging aircraft. As an example, FAA code 5301 SXBD was expanded to 20 items due to the high rate of reporting in this area (8021 structural reports were received in 1989). In some instances, there was very little reporting and codes were combined into other systems if the safety impact was not significant. The overall reduction in codes has been from 568 FAA codes to 488 JASC codes, with the significant increase being in the structural area as stated earlier.

The JASC code divides the engine section into two major code groups to separate the turbine and reciprocating engines. The codes for the turbine engines are in JASC Chapter 72, Turbine/Turboprop Engine. The codes for the reciprocating engines are now exclusively found in JASC Chapter 85, Reciprocating Engine.

The other major deviation from ATA Spec 100 is in ATA section 2730, specifically involves the stall warning system. Early technology (primarily on smaller aircraft) directly linked the sensing of flight attitude to one of the components which furnished the means of manually controlling the flight attitude characteristics (elevator). Today, most large transport category aircraft utilize electronic units to sense the change in the environmental condition called stall, and use the data to influence navigation. ATA section 3410, Flight Environment Data, includes high speed warning in its code definition. Stall warning (low speed) is the reciprocal term of high speed warning, so its filing under the same code appears more logical. Thus, with the JASC code it was decided to move the stall warning system to Chapter 34 under the separate code JASC code 3418, Stall Warning System.

The FAA is continuing to pursue worldwide involvement from operators and manufacturers in addressing the need for international standardization of aircraft system/component codes. The ultimate goal is to develop a universal aircraft/component numbering standard which can be used in the manufacturer's maintenance manual, wiring diagram manual, system manuals and illustrated parts catalog. This harmonized standard must be a usable standard for the aircraft manufacturers, air carrier operators and the general aviation community.

We welcome comments and feedback regarding the possible forming of working groups to achieve this long range consideration of possibly harmonizing the ATA Specification 100 code and the JASC code. Comments may be directed to the FAA, Aviation Data Sytem Branch, AFS-620, P.O. Box 25082, Oklahoma City, OK 73125.

# JOINT AIRCRAFT SYSTEM/COMPONENT CODE TABLE

## JASC/ TITLE

### 11 PLACARDS AND MARKINGS

1100 PLACARDS AND MARKINGS

### 12 SERVICING

1210 FUEL SERVICING  
1220 OIL SERVICING  
1230 HYDRAULIC FLUID SERVICING  
1240 COOLANT SERVICING

### 18 HELICOPTER VIBRATION

1800 HELICOPTER VIB/NOISE ANALYSIS  
1810 HELICOPTER VIBRATION ANALYSIS  
1820 HELICOPTER NOISE ANALYSIS

### 21 AIR CONDITIONING

2100 AIR CONDITIONING SYSTEM  
2110 CABIN COMPRESSOR SYSTEM  
2120 AIR DISTRIBUTION SYSTEM  
2121 AIR DISTRIBUTION FAN  
2130 CABIN PRESSURE CONTROL SYSTEM  
2131 CABIN PRESSURE CONTROLLER  
2132 CABIN PRESSURE INDICATOR  
2133 PRESSURE REGUL/OUTFLOW VALVE  
2134 CABIN PRESSURE SENSOR  
2140 HEATING SYSTEM  
2150 CABIN COOLING SYSTEM  
2160 CABIN TEMPERATURE CONTROL SYSTEM  
2161 CABIN TEMPERATURE CONTROLLER  
2162 CABIN TEMPERATURE INDICATOR  
2163 CABIN TEMPERATURE SENSOR  
2170 HUMIDITY CONTROL SYSTEM

### 22 AUTO FLIGHT

2200 AUTO FLIGHT SYSTEM  
2210 AUTOPILOT SYSTEM  
2211 AUTOPILOT COMPUTER  
2212 ALTITUDE CONTROLLER  
2213 FLIGHT CONTROLLER  
2214 AUTOPILOT TRIM INDICATOR  
2215 AUTOPILOT MAIN SERVO  
2216 AUTOPILOT TRIM SERVO  
2220 SPEED-ATTITUDE CORRECT. SYSTEM  
2230 AUTO THROTTLE SYSTEM  
2250 AERODYNAMIC LOAD ALLEVIATING

### 23 COMMUNICATIONS

2300 COMMUNICATIONS SYSTEM  
2310 HF COMMUNICATION SYSTEM  
2311 UHF COMMUNICATION SYSTEM  
2312 VHF COMMUNICATION SYSTEM  
2320 DATA TRANSMISSION AUTO CALL  
2330 ENTERTAINMENT SYSTEM  
2340 INTERPHONE & PA SYSTEM  
2350 AUDIO INTEGRATING SYSTEM  
2360 STATIC DISCHARGE SYSTEM  
2370 AUDIO/VIDEO MONITORING

### 24 ELECTRICAL POWER

2400 ELECTRICAL POWER SYSTEM  
2410 ALTERNATOR-GENERATOR DRIVE  
2420 AC GENERATION SYSTEM  
2421 AC GENERATOR-ALTERNATOR  
2422 AC INVERTER  
2423 PHASE ADAPTER

### 24 ELECTRICAL POWER CONT'D

2424 AC REGULATOR  
2425 AC INDICATING SYSTEM  
2430 DC GENERATING SYSTEM  
2431 BATTERY OVERHEAT WARN. SYSTEM  
2432 BATTERY/CHARGER SYSTEM  
2433 DC RECTIFIER-CONVERTER  
2434 DC GENERATOR-ALTERNATOR  
2435 STARTER-GENERATOR  
2436 DC REGULATOR  
2437 DC INDICATING SYSTEM  
2440 EXTERNAL POWER SYSTEM  
2450 AC POWER DISTRIBUTION SYSTEM  
2460 DC POWER/DISTRIBUTION SYSTEM

### 25 EQUIPMENT/FURNISHINGS

2500 CABIN EQUIPMENT/FURNISHINGS  
2510 FLIGHT COMPARTMENT EQUIPMENT  
2520 PASSENGER COMPARTMENT EQUIPMENT  
2530 BUFFET/GALLEYS  
2540 LAVATORIES  
2550 CARGO COMPARTMENTS  
2551 AGRICULTURAL SPRAY SYSTEM  
2560 EMERGENCY EQUIPMENT  
2561 LIFE JACKET  
2562 EMERGENCY LOCATOR BEACON  
2563 PARACHUTE  
2564 LIFE RAFT  
2565 ESCAPE SLIDE  
2570 ACCESSORY COMPARTMENT  
2571 BATTERY BOX STRUCTURE  
2572 ELECTRONIC SHELF SECTION

## **26 FIRE PROTECTION**

2600 FIRE PROTECTION SYSTEM  
2610 DETECTION SYSTEM  
2611 SMOKE DETECTION  
2612 FIRE DETECTION  
2613 OVERHEAT DETECTION  
2620 EXTINGUISHING SYSTEM  
2621 FIRE BOTTLE, FIXED  
2622 FIRE BOTTLE, PORTABLE

## **27 FLIGHT CONTROLS**

2700 FLIGHT CONTROL SYSTEM  
2701 CONTROL COLUMN SECTION  
2710 AILERON CONTROL SYSTEM  
2711 AILERON TAB CONTROL SYSTEM  
2720 RUDDER CONTROL SYSTEM  
2721 RUDDER TAB CONTROL SYSTEM  
2722 RUDDER ACTUATOR  
2730 ELEVATOR CONTROL SYSTEM  
2731 ELEVATOR TAB CONTROL SYSTEM  
2740 STABILIZER CONTROL SYSTEM  
2741 STABILIZER POSITION INDICATING  
2742 STABILIZER ACTUATOR  
2750 TE FLAP CONTROL SYSTEM  
2751 TE FLAP POSITION IND. SYSTEM  
2752 TE FLAP ACTUATOR  
2760 DRAG CONTROL SYSTEM  
2761 DRAG CONTROL ACTUATOR  
2770 GUST LOCK/DAMPER SYSTEM  
2780 LE FLAP CONTROL SYSTEM  
2781 LE FLAP POSITION IND. SYSTEM  
2782 LE FLAP ACTUATOR

## **28 FUEL**

2800 AIRCRAFT FUEL SYSTEM  
2810 FUEL STORAGE  
2820 ACFT FUEL DISTRIB. SYSTEM  
2821 ACFT FUEL FILTER/STRAINER  
2822 FUEL BOOST PUMP  
2823 FUEL SELECTOR/SHUTOFF VALVE  
2824 FUEL TRANSFER VALVE  
2830 FUEL DUMP SYSTEM  
2840 ACFT FUEL INDICATING  
2841 FUEL QUANTITY INDICATOR  
2842 FUEL QUANTITY SENSOR  
2843 FUEL TEMPERATURE INDICATING  
2844 FUEL PRESSURE INDICATOR

## **29 HYDRAULIC POWER**

2900 HYDRAULIC POWER SYSTEM  
2910 HYDRAULIC, MAIN SYSTEM  
2911 HYDRAULIC POWER-ACCUMULATOR-MAIN  
2912 HYDRAULIC FILTER-MAIN SYSTEM  
2913 HYDRAULIC PUMP. ELECT-ENG.-MAIN  
2914 HYDRAULIC HANDPUMP-MAIN  
2915 HYDRAULIC PRESSURE RELIEF VLV-MAIN  
2916 HYDRAULIC RESERVOIR-MAIN  
2917 HYDRAULIC PRESSURE REGULATOR-MAIN  
2920 HYDRAULIC, AUXILIARY SYSTEM  
2921 HYDRAULIC ACCUMULATOR-AUXILIARY  
2922 HYDRAULIC FILTER-AUXILIARY  
2923 HYDRAULIC PUMP-AUXILIARY  
2925 HYDRAULIC PRESSURE RELIEF-AUXILIARY  
2926 HYDRAULIC RESERVOIR-AUXILIARY  
2927 HYDRAULIC PRESSURE REGULATOR-AUX.  
2930 HYDRAULIC SYSTEM INDICATING  
2931 HYDRAULIC PRESSURE INDICATOR  
2932 HYDRAULIC PRESSURE SENSOR  
2933 HYDRAULIC QUANTITY INDICATOR  
2934 HYDRAULIC QUANTITY SENSOR

## **30 ICE AND RAIN PROTECTION**

3000 ICE/RAIN PROTECTION SYSTEM  
3010 AIRFOIL ANTI/DE-ICE SYSTEM  
3020 AIR INTAKE ANTI/DE-ICE SYSTEM  
3030 PITOT/STATIC ANTI-ICE SYSTEM  
3040 WINDSHIELD/DOOR RAIN/ICE REMOVAL  
3050 ANTENNA/RADOME ANTI-ICE/DE-ICE SYSTEM  
3060 PROP/ROTOR ANTI-ICE/DE-ICE SYSTEM  
3070 WATER LINE ANTI-ICE SYSTEM  
3080 ICE DETECTION

## **31 INSTRUMENTS**

3100 INDICATING/RECORDING SYSTEM  
3110 INSTRUMENT PANEL  
3120 INDEPENDENT INSTRUMENTS (CLOCK, ETC.)  
3130 DATA RECORDERS (FLT/MAINT)  
3140 CENTRAL COMPUTERS (EICAS)  
3150 CENTRAL WARNING  
3160 CENTRAL DISPLAY  
3170 AUTOMATIC DATA

## **32 LANDING GEAR**

3200 LANDING GEAR SYSTEM  
3201 LANDING GEAR/WHEEL FAIRING  
3210 MAIN LANDING GEAR  
3211 MAIN LANDING GEAR ATTACH SECTION  
3212 EMERGENCY FLOTATION SECTION  
3213 MAIN LANDING GEAR STRUT/AXLE/TRUCK  
3220 NOSE/TAIL LANDING GEAR  
3221 NOSE/TAIL LANDING GEAR ATTACH SECTION  
3222 NOSE/TAIL LANDING GEAR STRUT/AXLE  
3230 LANDING GEAR RETRACT/EXT. SYSTEM  
3231 LANDING GEAR DOOR RETRACT SECTION  
3232 LANDING GEAR DOOR ACTUATOR  
3233 LANDING GEAR ACTUATOR  
3234 LANDING GEAR SELECTOR  
3240 LANDING GEAR BRAKE SYSTEM  
3241 BRAKE ANTI-SKID SECTION  
3242 BRAKE  
3243 MASTER CYL/BRAKE VALVE  
3244 TIRE  
3245 TIRE TUBE  
3246 WHEEL/SKI/FLOAT  
3250 LANDING GEAR STEERING SYSTEM  
3251 STEERING UNIT  
3252 SHIMMY DAMPER  
3260 LANDING GEAR POSITION & WARNING  
3270 AUXILIARY GEAR (TAIL SKID)

## **33 LIGHTS**

3300 LIGHTING SYSTEM  
3310 FLIGHT COMPARTMENT LIGHTING  
3320 PASSENGER COMPARTMENT LIGHTING  
3330 CARGO COMPARTMENT LIGHTING  
3340 EXTERIOR LIGHTING  
3350 EMERGENCY LIGHTING

## **34 NAVIGATION**

3400 NAVIGATION SYSTEM  
3410 FLIGHT ENVIRONMENT DATA  
3411 PITOT/STATIC SYSTEM  
3412 OUTSIDE AIR TEMP. IND./SENSOR  
3413 RATE OF CLIMB INDICATOR  
3414 AIRSPEED/MACH INDICATING  
3415 HIGH SPEED WARNING  
3416 ALTIMETER, BAROMETRIC/ENCODER

### **34 NAVIGATION CONT'D**

3417 AIR DATA COMPUTER  
3418 STALL WARNING SYSTEM  
3420 ATTITUDE AND DIRECTION DATA SYSTEM  
3421 ATTITUDE GYRO & IND. SYSTEM  
3422 DIRECTIONAL GYRO & IND. SYSTEM  
3423 MAGNETIC COMPASS  
3424 TURN & BANK/RATE OF TURN INDICATOR  
3425 INTEGRATED FLT. DIRECTOR SYSTEM  
3430 LANDING & TAXI AIDS  
3431 LOCALIZER/VOR SYSTEM  
3432 GLIDE SLOPE SYSTEM  
3433 MICROWAVE LANDING SYSTEM  
3434 MARKER BEACON SYSTEM  
3435 HEADS UP DISPLAY SYSTEM  
3436 WIND SHEAR DETECTION SYSTEM  
3440 INDEPENDENT POS. DETERMINING SYSTEM  
3441 INERTIAL GUIDANCE SYSTEM  
3442 WEATHER RADAR SYSTEM  
3443 DOPPLER SYSTEM  
3444 GROUND PROXIMITY SYSTEM  
3445 AIR COLLISION AVOIDANCE SYSTEM (TCAS)  
3446 NON RADAR WEATHER SYSTEM  
3450 DEPENDENT POSITION DETERMINING SYSTEM  
3451 DME/TACAN SYSTEM  
3452 ATC TRANSPONDER SYSTEM  
3453 LORAN SYSTEM  
3454 VOR SYSTEM  
3455 ADF SYSTEM  
3456 OMEGA NAVIGATION SYSTEM  
3457 GLOBAL POSITIONING SYSTEM  
3460 FLIGHT MANAGE. COMPUTING SYSTEM

### **35 OXYGEN**

3500 OXYGEN SYSTEM  
3510 CREW OXYGEN SYSTEM  
3520 PASSENGER OXYGEN SYSTEM  
3530 PORTABLE OXYGEN SYSTEM

### **36 PNEUMATIC**

3600 PNEUMATIC SYSTEM  
3610 PNEUMATIC DISTRIBUTION SYSTEM  
3620 PNEUMATIC INDICATING SYSTEM

### **37 VACUUM**

3700 VACUUM SYSTEM  
3710 VACUUM DISTRIBUTION SYSTEM  
3720 VACUUM INDICATING SYSTEM

### **38 WATER/WASTE**

3800 WATER & WASTE SYSTEM  
3810 POTABLE WATER SYSTEM  
3820 WASH WATER SYSTEM  
3830 WASTE DISPOSAL SYSTEM  
3840 AIR SUPPLY (WATER PRESS. SYSTEM)

### **45 CENTRAL MAINT. SYSTEM**

4500 CENTRAL MAINT. COMPUTER

### **49 AIRBORNE AUXILIARY POWER**

4900 AIRBORNE APU SYSTEM  
4910 APU COWLING/CONTAINMENT  
4920 APU CORE ENGINE  
4930 APU ENGINE FUEL & CONTROL  
4940 APU START/IGNITION SYSTEM  
4950 APU BLEED AIR SYSTEM  
4960 APU CONTROLS  
4970 APU INDICATING SYSTEM  
4980 APU EXHAUST SYSTEM  
4990 APU OIL SYSTEM

### **51 STANDARD PRACTICES/STRUCTURES**

5100 STANDARD PRACTICES/STRUCTURES  
5101 AIRCRAFT STRUCTURES  
5102 BALLOON REPORTS

### **52 DOORS**

5200 DOORS  
5210 PASSENGER/CREW DOORS  
5220 EMERGENCY EXIT  
5230 CARGO/BAGGAGE DOORS  
5240 SERVICE DOORS  
5241 GALLEY DOORS  
5242 E/E COMPARTMENT DOORS  
5243 HYDRAULIC COMPARTMENT DOORS  
5244 ACCESSORY COMPARTMENT DOORS  
5245 AIR CONDITIONING COMPART. DOORS  
5246 FLUID SERVICE DOORS

5247 APU DOORS  
5248 TAIL CONE DOORS  
5250 FIXED INNER DOORS  
5260 ENTRANCE STAIRS  
5270 DOOR WARNING SYSTEM  
5280 LANDING GEAR DOORS

### **53 FUSELAGE**

5300 FUSELAGE STRUCTURE (GENERAL)  
5301 AERIAL TOW EQUIPMENT  
5302 ROTORCRAFT TAIL BOOM  
5310 FUSELAGE MAIN STRUCTURE  
5311 FUSELAGE MAIN FRAME  
5312 FUSELAGE MAIN BULKHEAD  
5313 FUSELAGE MAIN LONGERON/STRINGER  
5314 FUSELAGE MAIN KEEL  
5315 FUSELAGE MAIN FLOOR BEAM  
5320 FUSELAGE MISCELLANEOUS STRUCTURE  
5321 FUSELAGE FLOOR PANEL  
5322 FUSELAGE INTERNAL MOUNT STRUCTURE  
5323 FUSELAGE INTERNAL STAIRS  
5324 FUSELAGE FIXED PARTITIONS  
5330 FUSELAGE MAIN PLATE/SKIN  
5340 FUSELAGE MAIN ATTACH FITTINGS  
5341 WING ATTACH FITTINGS (ON FUSELAGE)  
5342 STABILIZER ATTACH FITTINGS  
5343 LANDING GEAR ATTACH FITTINGS  
5344 FUSELAGE DOOR HINGES  
5345 FUSELAGE EQUIPMENT ATTACH FITTINGS  
5346 POWERPLANT ATTACH FITTINGS  
5347 SEAT/CARGO ATTACH FITTINGS  
5350 FUSELAGE AERODYNAMIC FAIRINGS

### **54 NACELLES/PYLONS**

5400 NACELLE/PYLON STRUCTURE  
5410 MAIN FRAME (ON NACELLE/PYLON)  
5411 FRAME/SPAR/RIB(NACELLE/PYLON)  
5412 BULKHEAD/FIREWALL (NAC/PYLON)  
5413 LONGERON/STRINGER (NAC/PYLON)  
5414 PLATE SKIN (NAC/PYLONS)  
5415 ATTACH FITTINGS (NAC/PYLON)

### **55 STABILIZERS**

5500 EMPENNAGE STRUCTURE  
5510 HORIZONTAL STABILIZER STRUCTURE  
5511 HORIZONTAL STABILIZER SPAR/RIB  
5512 HORIZONTAL STABILIZER PLATE/SKIN  
5513 HORIZONTAL STABILIZER TAB STRUCTURE  
5520 ELEVATOR STRUCTURE

**55 STABILIZERS CONT'D**

5521 ELEVATOR SPAR/RIB STRUCTURE  
5522 ELEVATOR PLATES/SKIN STRUCTURE  
5523 ELEVATOR TAB STRUCTURE  
5530 VERTICAL STABILIZER STRUCTURE  
5531 VERTICAL STABILIZER SPAR/RIB STRUCTURE  
5532 VERTICAL STABILIZER PLATES/SKIN  
5533 VENTRAL STRUCTURE (ON VERT. STAB)  
5540 RUDDER STRUCTURE  
5541 RUDDER SPAR/RIB STRUCTURE  
5542 RUDDER PLATE/SKIN STRUCTURE  
5543 RUDDER TAB STRUCTURE  
5550 EMPENNAGE FLT. CONT. ATTACH FITTING  
5551 HORIZONTAL STABILIZER ATTACH FITTING  
5552 ELEVATOR/TAB ATTACH FITTINGS  
5553 VERT. STAB. ATTACH FITTINGS  
5554 RUDDER/TAB ATTACH FITTINGS

**56 WINDOWS**

5600 WINDOW/WINDSHIELD SYSTEM  
5610 FLIGHT COMPARTMENT WINDOWS  
5620 PASSENGER COMPARTMENT WINDOWS  
5630 DOOR WINDOWS  
5640 INSPECTION WINDOWS

**57 WINGS**

5700 WING STRUCTURE  
5710 WING MAIN FRAME STRUCTURE  
5711 WING SPAR STRUCTURE  
5712 WING RIB STRUCTURE  
5713 WING LONGERON/STRINGER  
5714 WING CENTER BOX  
5720 WING MISCELLANEOUS STRUCTURE  
5730 WING PLATES/SKINS  
5740 WING ATTACH FITTINGS  
5741 WING, FUSELAGE ATTACH FITTINGS  
5742 WING, NAC/PYLON ATTACH FITTINGS  
5743 WING, LANDING GEAR ATTACH FITTINGS  
5744 CONTROL SURFACE ATTACH FITTINGS  
5750 WING CONTROL SURFACE STRUCTURE  
5751 AILERON STRUCTURE  
5752 AILERON TAB STRUCTURE  
5753 TE FLAP STRUCTURE  
5754 LEADING EDGE DEVICE STRUCTURE  
5755 SPOILER STRUCTURE

**61 PROPELLERS/PROPULSORS**

6100 PROPELLER SYSTEM  
6110 PROPELLER ASSEMBLY  
6111 PROPELLER BLADE SECTION  
6112 PROPELLER DE-ICE BOOT SECTION  
6113 PROPELLER SPINNER SECTION  
6114 PROPELLER HUB SECTION  
6120 PROPELLER CONTROL SYSTEM  
6121 PROPELLER SYNCHRONIZER SECTION  
6122 PROPELLER GOVERNOR  
6123 PROPELLER FEATHERING/REVERSING  
6130 PROPELLER BRAKING  
6140 PROPELLER INDICATING SYSTEM

**62 MAIN ROTOR**

6200 MAIN ROTOR SYSTEM  
6210 MAIN ROTOR BLADES  
6220 MAIN ROTOR HEAD  
6230 MAIN ROTOR MAST/SWASHPLATE  
6240 MAIN ROTOR INDICATING SYSTEM

**63 MAIN ROTOR DRIVE**

6300 MAIN ROTOR DRIVE SYSTEM  
6310 ENGINE/TRANSMISSION COUPLING  
6320 MAIN ROTOR GEARBOX  
6321 MAIN ROTOR BRAKE  
6322 ROTORCRAFT COOLING FAN SYSTEM  
6330 MAIN ROTOR TRANSMISSION MOUNT  
6340 ROTOR DRIVE INDICATING SYSTEM

**64 TAIL ROTOR**

6400 TAIL ROTOR SYSTEM  
6410 TAIL ROTOR BLADE  
6420 TAIL ROTOR HEAD  
6440 TAIL ROTOR INDICATING SYSTEM

**65 TAIL ROTOR DRIVE**

6500 TAIL ROTOR DRIVE SYSTEM  
6510 TAIL ROTOR DRIVE SHAFT  
6520 TAIL ROTOR GEARBOX  
6540 TAIL ROTOR DRIVE INDICATING SYSTEM

**67 ROTORS FLIGHT CONTROL**

6700 ROTORCRAFT FLIGHT CONTROL  
6710 MAIN ROTOR CONTROL  
6711 TILT ROTOR FLIGHT CONTROL  
6720 TAIL ROTOR CONTROL SYSTEM  
6730 ROTORCRAFT SERVO SYSTEM

**71 POWERPLANT**

7100 POWERPLANT SYSTEM  
7110 ENGINE COWLING SYSTEM  
7111 COWL FLAP SYSTEM  
7112 ENGINE AIR BAFFLE SECTION  
7120 ENGINE MOUNT SECTION  
7130 ENGINE FIRESEALS  
7160 ENGINE AIR INTAKE SYSTEM  
7170 ENGINE DRAINS

**72 TURBINE/TURBOPROP ENGINE**

7200 ENGINE (TURBINE/TURBOPROP)  
7210 TURBINE ENGINE REDUCTION GEAR  
7220 TURBINE ENGINE AIR INLET SECTION  
7230 TURBINE ENGINE COMPRESSOR SECTION  
7240 TURBINE ENGINE COMBUSTION SECTION  
7250 TURBINE SECTION  
7260 TURBINE ENGINE ACCESSORY DRIVE  
7261 TURBINE ENGINE OIL SYSTEM  
7270 TURBINE ENGINE BYPASS SECTION

**73 ENGINE FUEL & CONTROL**

7300 ENGINE FUEL & CONTROL  
7310 ENGINE FUEL DISTRIBUTION  
7311 ENGINE FUEL-OIL COOLER  
7312 FUEL HEATER  
7313 FUEL INJECTOR NOZZLE  
7314 ENGINE FUEL PUMP  
7320 FUEL CONTROLLING SYSTEM  
7321 FUEL CONTROL/ELECTRONIC  
7322 FUEL CONTROL/CARBURETOR  
7323 TURBINE GOVERNOR  
7324 FUEL DIVIDER  
7330 ENGINE FUEL INDICATING SYSTEM  
7331 FUEL FLOW INDICATING  
7332 FUEL PRESSURE INDICATING  
7333 FUEL FLOW SENSOR  
7334 FUEL PRESSURE SENSOR

#### **74 IGNITION**

7400 IGNITION SYSTEM  
7410 IGNITION POWER SUPPLY  
7411 LOW TENSION COIL  
7412 EXCITER  
7413 INDUCTION VIBRATOR  
7414 MAGNETO/DISTRIBUTOR  
7420 IGNITION HARNESS (DISTRIBUTION)  
7421 SPARK PLUG/IGNITER  
7430 IGNITION SWITCHING

#### **75 AIR**

7500 ENGINE BLEED AIR SYSTEM  
7510 ENGINE ANTI-ICING SYSTEM  
7520 ENGINE COOLING SYSTEM  
7530 COMPRESSOR BLEED CONTROL  
7531 COMPRESSOR BLEED GOVERNOR  
7532 COMPRESSOR BLEED VALVE  
7540 BLEED AIR INDICATING SYSTEM

#### **76 ENGINE CONTROLS**

7600 ENGINE CONTROLS  
7601 ENGINE SYNCHRONIZING  
7602 MIXTURE CONTROL  
7603 POWER LEVER  
7620 ENGINE EMERGENCY SHUTDOWN SYSTEM

#### **77 ENGINE INDICATING**

7700 ENGINE INDICATING SYSTEM  
7710 POWER INDICATING SYSTEM  
7711 ENGINE PRESSURE RATIO (EPR)  
7712 ENGINE BMEP/TORQUE INDICATING  
7713 MANIFOLD PRESSURE (MP) INDICATING  
7714 ENGINE RPM INDICATING SYSTEM  
7720 ENGINE TEMP. INDICATING SYSTEM  
7721 CYLINDER HEAD TEMP (CHT) INDICATING  
7722 ENG. EGT/TIT INDICATING SYSTEM  
7730 ENGINE IGNITION ANALYZER SYSTEM  
7731 ENGINE IGNITION ANALYZER  
7732 ENGINE VIBRATION ANALYZER  
7740 ENGINE INTEGRATED INSTRUMENT SYSTEM

#### **78 ENGINE EXHAUST**

7800 ENGINE EXHAUST SYSTEM  
7810 ENGINE COLLECTOR/TAILOPIPE/NOZZLE  
7820 ENGINE NOISE SUPPRESSOR  
7830 THRUST REVERSER

#### **79 ENGINE OIL**

7900 ENGINE OIL SYSTEM (AIRFRAME)  
7910 ENGINE OIL STORAGE (AIRFRAME)  
7920 ENGINE OIL DISTRIBUTION (AIRFRAME)  
7921 ENGINE OIL COOLER  
7922 ENGINE OIL TEMP. REGULATOR  
7923 OIL SHUTOFF VALVE  
7930 ENGINE OIL INDICATING SYSTEM  
7931 ENGINE OIL PRESSURE  
7932 ENGINE OIL QUANTITY  
7933 ENGINE OIL TEMPERATURE

#### **80 STARTING**

8000 ENGINE STARTING SYSTEM  
8010 ENGINE CRANKING  
8011 ENGINE STARTER  
8012 ENGINE START VALVES/CONTROLS

#### **81 TURBOCHARGING**

8100 EXHAUST TURBINE SYSTEM (RECIP)  
8110 POWER RECOVERY TURBINE (RECIP)  
8120 EXHAUST TURBOCHARGER

#### **82 WATER INJECTION**

8200 WATER INJECTION SYSTEM

#### **83 ACCESSORY GEARBOXES**

8300 ACCESSORY GEARBOXES

#### **85 RECIPROCATING ENGINE**

8500 ENGINE (RECIPROCATING)  
8510 RECIPROCATING ENGINE FRONT SECTION  
8520 RECIPROCATING ENGINE POWER SECTION

8530 RECIPROCATING ENGINE CYLINDER SECTION  
8540 RECIPROCATING ENGINE REAR SECTION  
8550 RECIPROCATING ENGINE OIL SYSTEM



## ***MECHANICS CREED***

UPON MY HONOR I swear that I shall hold in sacred trust the rights and privileges conferred upon me as a certified mechanic. Knowing full well that the safety and lives of others are dependent upon my skill and judgment, I shall never knowingly subject others to risks which I would not be willing to assume for myself, or for those dear to me.

IN DISCHARGING this trust, I pledge myself never to undertake work or approve work which I feel to be beyond the limits of my knowledge; nor shall I allow any non-certificated superior to persuade me to approve aircraft or equipment as airworthy against my better judgment; nor shall I permit my judgment to be influenced by money or other personal gain; nor shall I pass as airworthy aircraft or equipment about which I am in doubt, either as a result of direct inspection or uncertainty regarding the ability of others who have worked on it to accomplish their work satisfactorily.

I REALIZE the grave responsibility which is mine as a certified airman, to exercise my judgment on the airworthiness of aircraft and equipment. I, therefore, pledge unyielding adherence to these precepts for the advancement of aviation and for the dignity of my vocation.